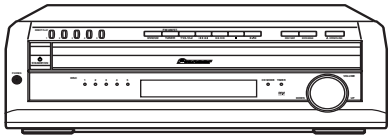
Pioneer sound.vision.soul

Service Manual



XV-HTD540

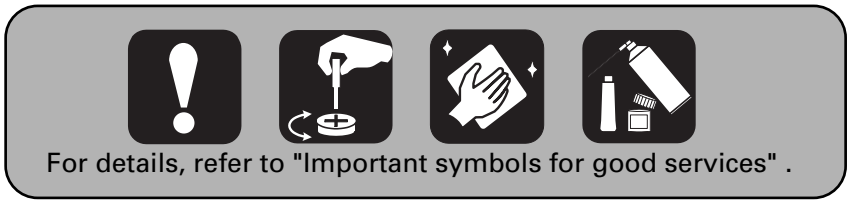
ORDER NO.
RRV2908

DVD/CD RECEIVER

XV-HTD540
XV-DV8

THIS MANUAL IS APPLICABLE TO THE FOLLOWING MODEL(S) AND TYPE(S).

Model	Type	Power Requirement	Region No.	Remarks
XV-HTD540	KUCXJ	AC120V	1	
XV-DV8	DDXJ/RA	AC120-127/220-230/240V	1	
XV-DV8	DDXJ/RB	AC120-127/220-230/240V	2	
XV-DV8	DLXJ/NC	AC120-127/220-230/240V	3	
XV-DV8	DPWXJ	AC120-127/220-230/240V	4	



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ⓒ**PIONEER CORPORATION 2004**

T-ZZR APR 2004 printed in Japan

SAFETY INFORMATION

This service manual is intended for qualified service technicians; it is not meant for the casual do-it-yourselfer. Qualified technicians have the necessary test equipment and tools, and have been trained to properly and safely repair complex products such as those covered by this manual.

Improperly performed repairs can adversely affect the safety and reliability of the product and may void the warranty. If you are not qualified to perform the repair of this product properly and safely, you should not risk trying to do so and refer the repair to a qualified service technician.

WARNING

This product contains lead in solder and certain electrical parts contain chemicals which are known to the state of California to cause cancer, birth defects or other reproductive harm.

Health & Safety Code Section 25249.6 – Proposition 65

NOTICE

(FOR CANADIAN MODEL ONLY)

Fuse symbols (fast operating fuse) and/or (slow operating fuse) on PCB indicate that replacement parts must be of identical designation.

REMARQUE

(POUR MODÈLE CANADIEN SEULEMENT)

Les symboles de fusible (fusible de type rapide) et/ou (fusible de type lent) sur CCI indiquent que les pièces de remplacement doivent avoir la même désignation.

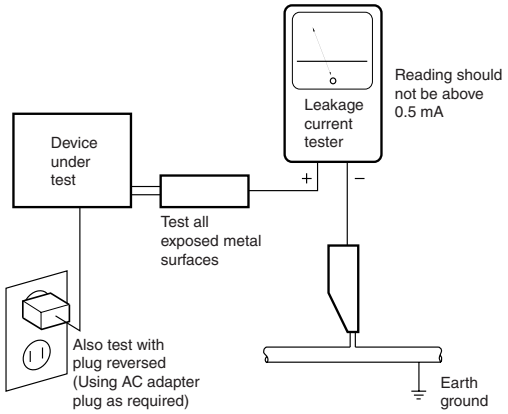
(FOR USA MODEL ONLY)

1. SAFETY PRECAUTIONS

The following check should be performed for the continued protection of the customer and service technician.

LEAKAGE CURRENT CHECK

Measure leakage current to a known earth ground (water pipe, conduit, etc.) by connecting a leakage current tester such as Simpson Model 229-2 or equivalent between the earth ground and all exposed metal parts of the appliance (input/output terminals, screwheads, metal overlays, control shaft, etc.). Plug the AC line cord of the appliance directly into a 120V AC 60 Hz outlet and turn the AC power switch on. Any current measured must not exceed 0.5 mA.


Leakage current tester
Reading should not be above 0.5 mA
Device under test
+
–
Test all exposed metal surfaces
Also test with plug reversed (Using AC adapter plug as required)
Earth ground

AC Leakage Test

ANY MEASUREMENTS NOT WITHIN THE LIMITS OUTLINED ABOVE ARE INDICATIVE OF A POTENTIAL SHOCK HAZARD AND MUST BE CORRECTED BEFORE RETURNING THE APPLIANCE TO THE CUSTOMER.

2. PRODUCT SAFETY NOTICE

Many electrical and mechanical parts in the appliance have special safety related characteristics. These are often not evident from visual inspection nor the protection afforded by them necessarily can be obtained by using replacement components rated for voltage, wattage, etc. Replacement parts which have these special safety characteristics are identified in this Service Manual.

Electrical components having such features are identified by marking with a ⚠ on the schematics and on the parts list in this Service Manual.

The use of a substitute replacement component which does not have the same safety characteristics as the PIONEER recommended replacement one, shown in the parts list in this Service Manual, may create shock, fire, or other hazards.

Product Safety is continuously under review and new instructions are issued from time to time. For the latest information, always consult the current PIONEER Service Manual. A subscription to, or additional copies of, PIONEER Service Manual may be obtained at a nominal charge from PIONEER.

[Important symbols for good services]
In this manual, the symbols shown-below indicate that adjustments, settings or cleaning should be made securely.
When you find the procedures bearing any of the symbols, be sure to fulfill them:

1. Product safety

You should conform to the regulations governing the product (safety, radio and noise, and other regulations), and should keep the safety during servicing by following the safety instructions described in this manual.

2. Adjustments

To keep the original performances of the product, optimum adjustments or specification confirmation is indispensable. In accordance with the procedures or instructions described in this manual, adjustments should be performed.

3. Cleaning

For optical pickups, tape-deck heads, lenses and mirrors used in projection monitors, and other parts requiring cleaning, proper cleaning should be performed to restore their performances.

4. Shipping mode and shipping screws

To protect the product from damages or failures that may be caused during transit, the shipping mode should be set or the shipping screws should be installed before shipping out in accordance with this manual, if necessary.

5. Lubricants, glues, and replacement parts

Appropriately applying grease or glue can maintain the product performances. But improper lubrication or applying glue may lead to failures or troubles in the product. By following the instructions in this manual, be sure to apply the prescribed grease or glue to proper portions by the appropriate amount.For replacement parts or tools, the prescribed ones should be used.

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1. SPECIFICATIONS

Specifications

Amplifier Section

Continuous Power Output (RMS):
Front,center,surround .....100 W per channel
(1 kHz,10 %T.H.D.,6 Ω)
Subwoofer ....100 W (100 Hz,10 %T.H.D.,6 Ω)

Disc section

Digital audio
characteristics ..... DVD fs:96 kHz,24-bit
Type .....DVD system,video CD system and compact disc digital audio system
Frequency response ..... 4 Hz to 44 kHz
Wow and Flutter ..... Limit of measurement (±0.001 %W.PEAK)or less (EIAJ)

Tuner Section

FM tuner section
Frequency range..... 87.5 to 108 MHz
Antenna..... 75 Ω,unbalanced
AM tuner section
Frequency range
With 9 kHz step..... 531 kHz to 1,602 kHz
With 10 kHz step..... 530 kHz to 1,700 kHz
(Not applicable to the Saudi Arabian model)
Antenna..... Loop antenna

Note:
• Specifications and design subject to possible modification without notice, due improvements.

Miscellaneous

Power Supply Section (XV-HTD540)
..... AC 120 V,60 Hz
Power requirements. . . . . AC 120-127/220-230/
(XV-DV8) 240 V (switchable), 50/60 Hz
Power consumption
..... 180 W
Power consumption in standby
..... 0.5 W

Dimensions ... 420 (W)x 126 (H)x 445 (D)mm/
16-9/16 (W)x 4-15/16 (H)x 17-5/8 (D)in.
Weight ..... 9.8 kg/21 lb 10 oz

Accessories (DVD/CD receiver)

Remote control Unit 1
AA/R6P dry cell batteries 2
AM loop antenna 1
FM antenna 1
Video cord (yellow plugs) 1
Mini jack cable 1
Power cord 1

Power plug adapter (Central and South American models, PX model) 1
These operating instructions 1
Warranty Card (Australian and PX model) 1

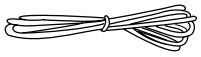
* Manufactured under license from Dolby Laboratories. "Dolby", "Pro Logic", and the double-D symbol are trademarks of Dolby Laboratories.

** "DTS" and "DTS Digital Surround" are registered trademarks of Digital Theater Systems, Inc.

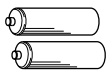
■ Accessories

● Remote Control Unit x 1
(XXD3080)

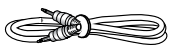
● FM Antenna x 1
(ADH7030)



● AA/R6P Dry Cell Batteries x 2

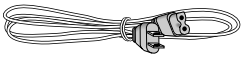


● Mini Jack Cable
(ADE7095)



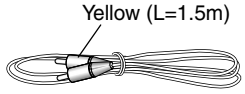
● AM Loop Antenna x 1
(ATB7013)

● Power Cord x 1
(XV-HTD540 : ADG7021)

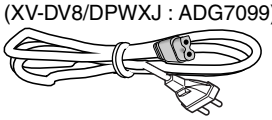


● Power Plug Adapter
(XV-DV8/DDXJ/RA Only XKM3001)

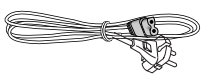
● Video Cord x 1
(XDE3046)



● Power Cord x 1
(XV-DV8/DLXJ/NC : ADG1154)
(XV-DV8/DDXJ/RA : ADG1154)
(XV-DV8/DPWXJ : ADG7099)



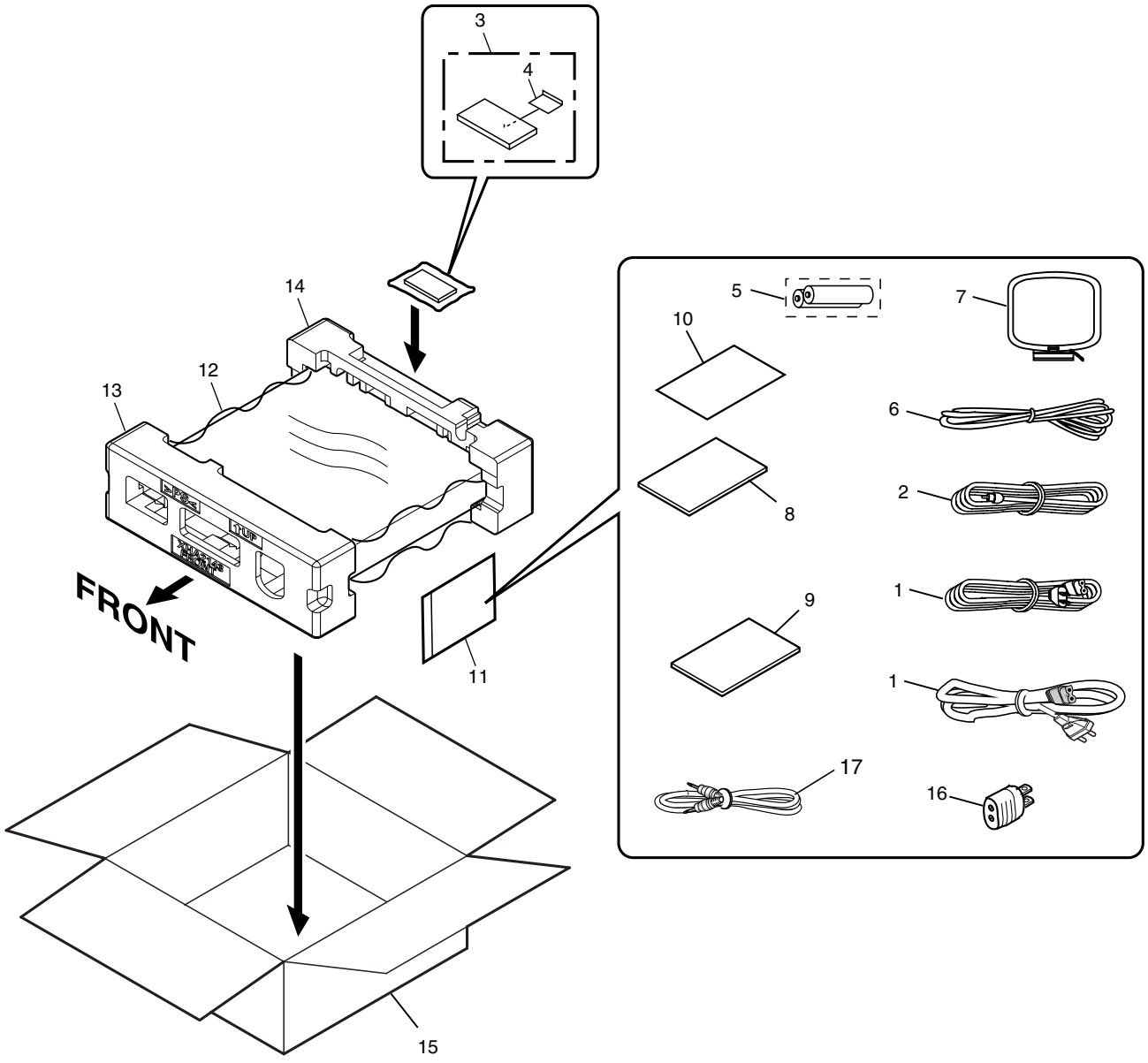
● Power Cord x 1
(XV-DV8/DDXJ/RB : ADG1158)



2. EXPLODED VIEWS AND PARTS LIST

NOTES:
- *Parts marked by "NSP" are generally unavailable because they are not in our Master Spare Parts List.*
- *The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.*
- *Screws adjacent to ▼ mark on product are used for disassembly.*
- *For the applying amount of lubricants or glue, follow the instructions in this manual. (In the case of no amount instructions, apply as you think it appropriate.)*

2.1 PACKING



PACKING parts List

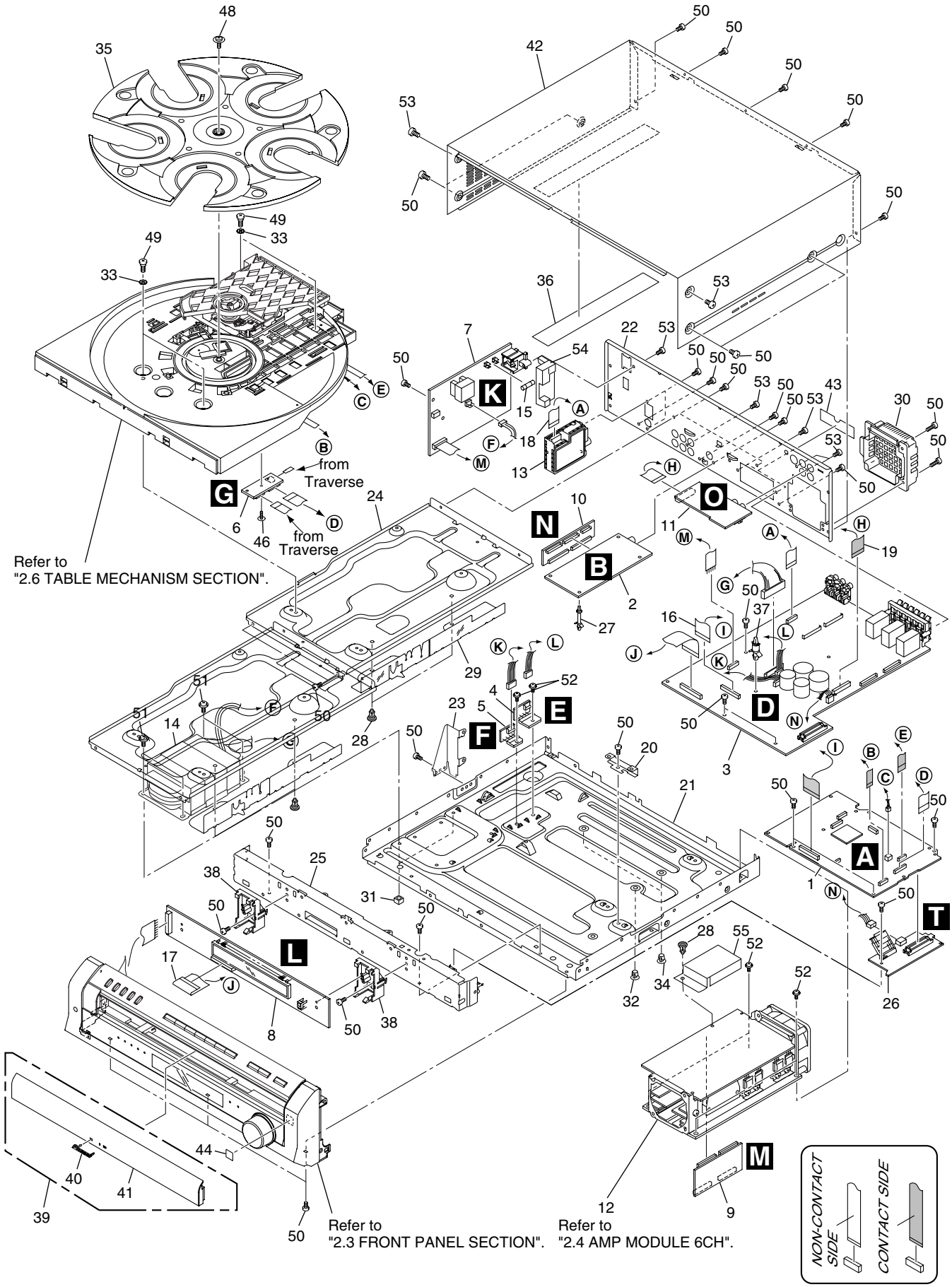
Mark	No.	Description	Part No.
⚠	1	Power Cord	See Contrast table(2)
	2	Video Cord (L = 1.5m)	XDE3046
	3	Remote Control Unit	XXD3080
	4	Battery Cover	AZN7933
NSP	5	Dry Cell Battery (R6P, AA)	VEM1031
	6	FM Antenna Assy	ADH7030
	7	AM Loop Antenna Assy	ATB7013
	8	Operating Instructions	See Contrast table(2)
	9	Operating Instructions	See Contrast table(2)
NSP	10	Warranty Card	See Contrast table(2)
NSP	11	Polyethylene Bag (0.03 x 230 x 340)	Z21-038
	12	Packing Sheet	AHG7010
	13	Front Pad (PS)	XHA3143
	14	Rear Pad (PS)	XHA3144
	15	Packing Case (PAP)	See Contrast table(2)
	16	Power Plug adapter	See Contrast table(2)
	17	Mini Jack Cable(4P)	ADE7095

(2) CONTRAST TABLE

XV-DV8/DDXJ/RA, DDXJ/RB, DLXJ/NC, DPWXJ and XV-HTD540/KUCXJ are constructed the same except for the following :

Mark	No.	Symbol and Description	Part No.				
			XV-HTD540 /KUCXJ	XV-DV8 /DDXJ/RA	XV-DV8 /DDXJ/RB	XV-DV8 /DLXJ/NC	XV-DV8 /DPWXJ
⚠	1	AC Power Cord	ADG7021	ADG1154	ADG1158	ADG1154	ADG7099
	8	Operating Instructions	XRB3032 (English)	XRB3033 (English)	XRB3040 (English)	XRB3033 (English)	XRB3033 (English)
	9	Operating Instructions	XRC3123 (French)	Not used	XRC3126 (Arabic)	XRC3125 (Chinese)	Not used
NSP	10	Warranty Card	ARY7045	ARY7025	Not used	Not used	ARY7047
	15	Packing Case	XHD3418	XHD3452	XHD3420	XHD3424	XHD3426
	16	Power Plug Adapter	Not used	XKM3001	Not used	Not used	Not used

2.2 EXTERIOR SECTION



EXTERIOR SECTION parts List

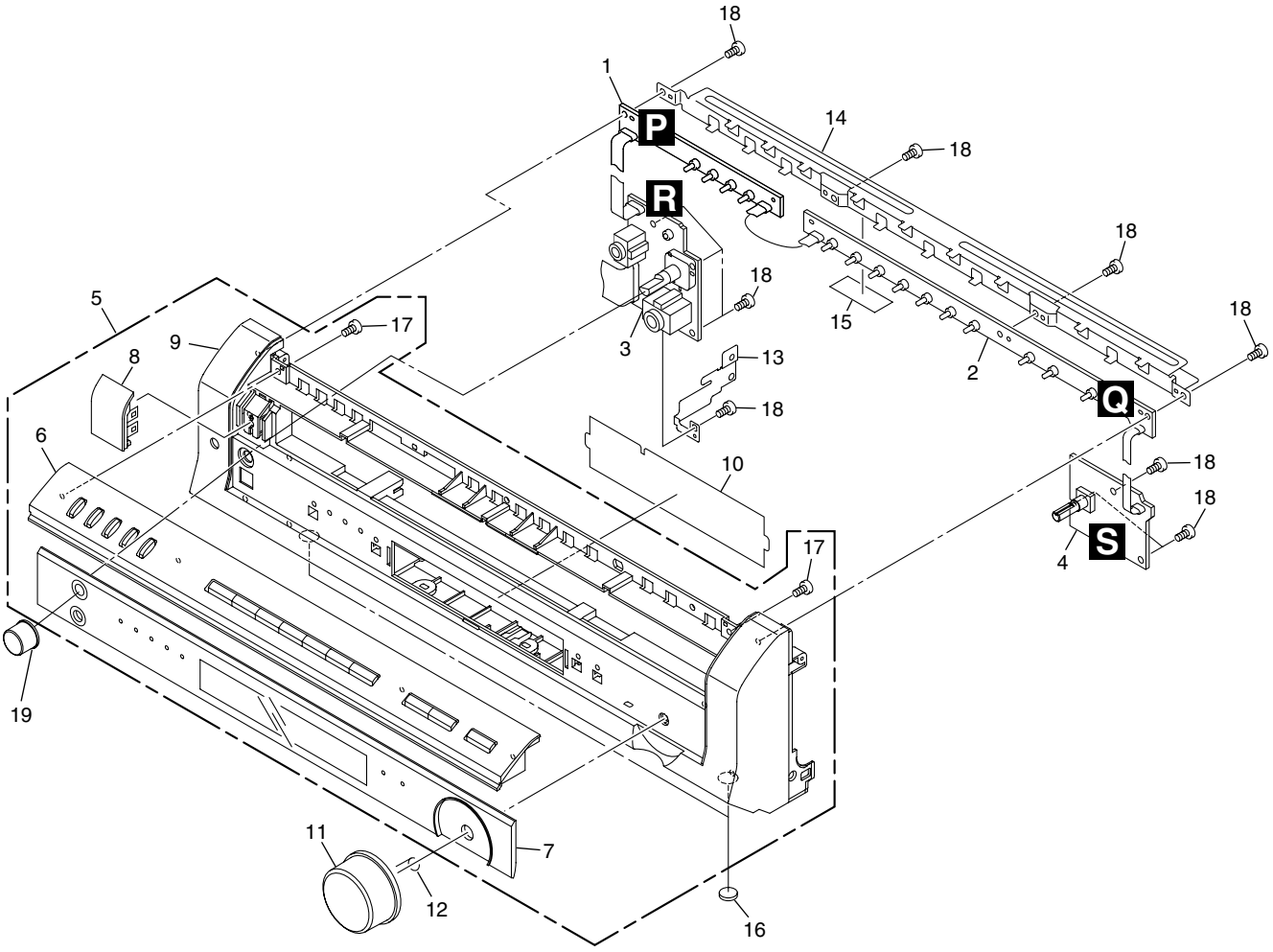
Mark	No.	Description	Part No.
	1	DVDM Assy	See Contrast table(2)
	2	DSP Assy	AWX8523
	3	AF Assy	See Contrast table(2)
	4	DIODE L Assy	See Contrast table(2)
	5	DIODE S Assy	XWZ3842
	6	SSIB Assy	XWZ3843
	7	PRIMARY Assy	See Contrast table(2)
	8	DISPLAY Assy	XWZ3846
	9	AMP TRADE Assy	XWZ3847
	10	DSP TRADE Assy	XWZ3848
	11	VIDEO JACK Assy	XWZ3849
NSP	12	6CH AMP Module	AXQ7254
	13	FM/AM TUNER Module	See Contrast table(2)
⚠	14	Power Transformer (T1)	See Contrast table(2)
⚠	15	Fuse (FU1 :)	See Contrast table(2)
	16	F.F.C/60V	See Contrast table(2)
	17	27P F.F.C/60V	ADD7412
	18	11P F.F.C/30V (AF CN5701 - TUNER UNIT CN201)	XDD3152
	19	21P F.F.C/30V (AF CN5103 - VIDIO JACK CN8001)	XDD3153
	20	DVD Angle HTL	ANG7457
NSP	21	Chassis HTL	XNA3020
	22	Rear Panel HTL	See Contrast table(2)
	23	PCB Angle	XNG3057
	24	Mecha Frame HTL	XNG3121
	25	Front Frame HTL	XNG3122
	26	DVD TRADE Assy	See Contrast table(2)
NSP	27	PCB Spacer	AEC1446
	28	Push Rivet	AEC7370
	29	Barrier A HTL	AEC7469
	30	Fan Cover HTL	AMR7451
	31	Disc Guard	PNM1245
NSP	32	PCB Holder HTL	PNW1706
	33	Mech. Spacer(T1.5)	VEB1339
NSP	34	PC Support	VEC1749
	35	Rotary Tray	VNK5558
	36	Bonnet Cushion	XEB3027
NSP	37	PCB Support	XEC3020
	38	PCB Holder	XMR3087
NSP	39	Tray Cap Assy HTL	XXG3173
	40	Name Plate	VAM1129
	41	Tray Cap	XAK3449
	42	Bonnet HTM	AZN7932
	43	Speaker Label HTL	AAX7976
NSP	44	Energy Star Label	AAX8022
	45	• • • •	
	46	Screw	Z39-019
	47	• • • •	
	48	Screw	ABA7112
	49	Step Screw C	ABA7113
	50	Screw	BBZ30P060FTC
	51	Screw	BBZ40P060FTC
	52	Screw	IBZ30P080FTC
	53	Screw	VPZ30P100FTC
	54	VS Knob	See Contrast table(2)
	55	Barrier B HTM	See Contrast table(2)

(2) CONTRAST TABLE

XV-DV8/DDXJ/RA, DDXJ/RB, DLXJ/NC, DPWXJ and XV-HTD540/KUCXJ are constructed the same except for the following :

Mark	No.	Symbol and Description	Part No.				
			XV-HTD540 /KUCXJ	XV-DV8 /DDXJ/RA	XV-DV8 /DDXJ/RB	XV-DV8 /DLXJ/NC	XV-DV8 /DPWXJ
	1	DVDM Assy	AWM7882	AWM7881	AWM7881	AWM7881	AWM7881
	3	AF Assy	XWZ3837	XWZ3836	XWZ3836	XWZ3836	XWZ3836
	4	DIODE L Assy	XWZ3840	XWZ3841	XWZ3841	XWZ3841	XWZ3841
	7	PRIMARY Assy	XWZ3844	XWZ3845	XWZ3845	XWZ3845	XWZ3845
	13	FM/AM TUNER Module	AXX7172	AXX7173	AXX7173	AXX7173	AXX7173
⚠	14	Power Transformer	ATS7354	ATS7355	ATS7355	ATS7355	ATS7355
⚠	15	Fuse (FU1 :)	REK1069 (6.3A/125V)	REK1029 (5.0A/250V)	REK1029 (5.0A/250V)	REK1029 (5.0A/250V)	REK1029 (5.0A/250V)
	16	F. F. C./ 60V	ADD7414(30P)	ADD7409(18P)	ADD7409(18P)	ADD7409(18P)	ADD7409(18P)
	22	Rear Panel HTL	XNC3271	XNC3273	XNC3274	XNC3275	XNC3276
	26	DVD TRADE Assy	XWZ3858	Not used	Not used	Not used	Not used
	54	VS Knob	Not used	AAD7690	AAD7690	AAD7690	AAD7690
	55	Barrier B HTM	Not used	AEC7470	AEC7470	AEC7470	AEC7470

2.3 FRONT PANEL SECTION



FRONT PANEL SECTION parts List

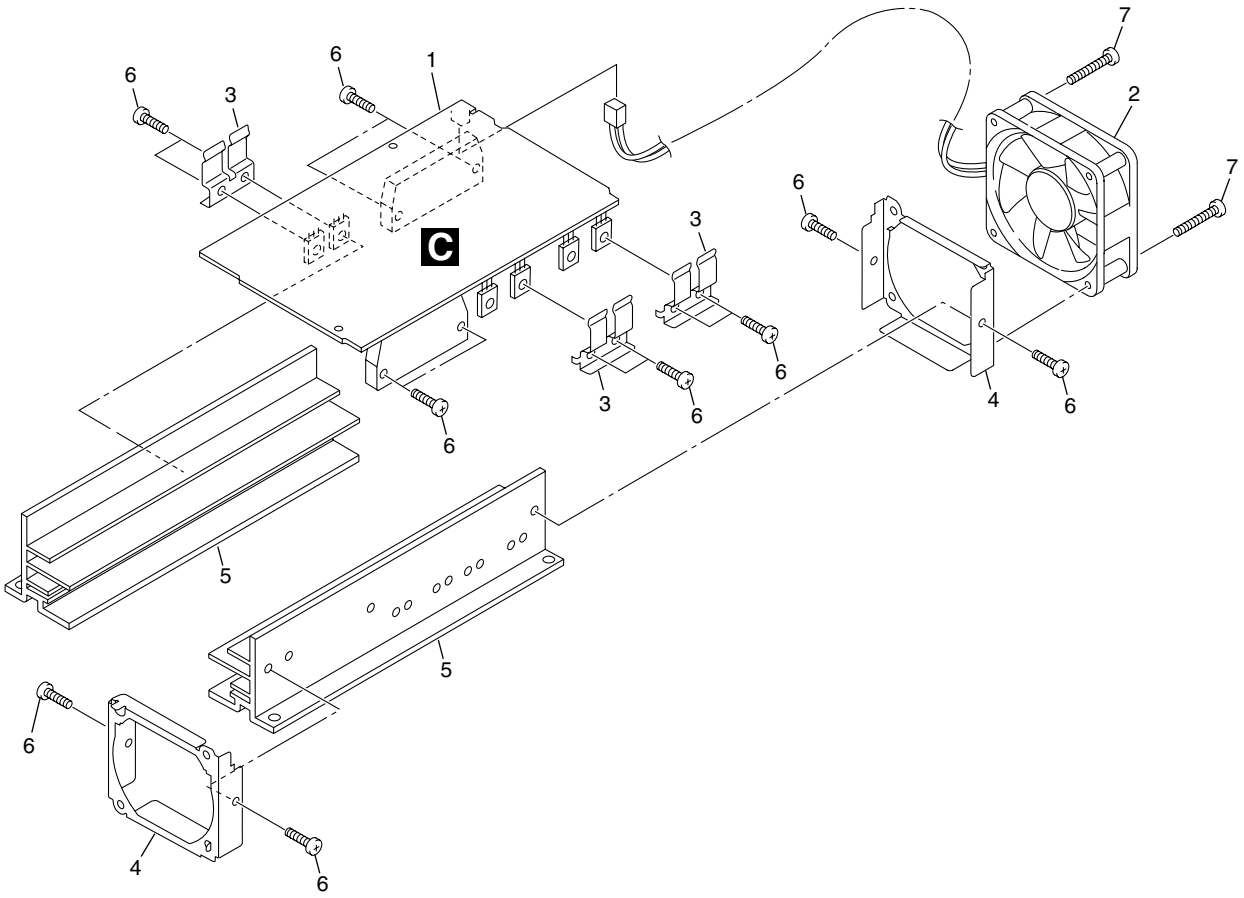
Mark	No.	Description	Part No.
	1	FUNCTION KEY Assy	XWZ3850
	2	DISC KEY Assy	XWZ3851
	3	H. P MIC Assy	See Contrast table(2)
	4	JOG Assy	XWZ3854
NSP	5	Front Panel Assy HTL	See Contrast table(2)
	6	Top Panel Assy	XZN3147
	7	Display Window HTL	See Contrast table(2)
	8	Power Cap	XAK3445
	9	Front Panel	See Contrast table(2)
	10	FL Filter HTL	AAK8100
	11	VOL Knob	XAA3027
	12	VOL Ring	ABH7230
	13	GND Plate L	XNG3123
	14	Top Frame	XNG3124
	15	Sensor Cushion	XEB3040
	16	Leg	AEB7090
	17	Screw	BPZ30P080FTC
	18	Screw	VPZ30P100FTC
	19	MIC Knob	See Contrast table(2)

(2) CONTRAST TABLE

XV-DV8/DDXJ/RA, DDXJ/RB, DLXJ/NC, DPWXJ and XV-HTD540/KUCXJ are constructed the same except for the following :

Mark	No.	Symbol and Description	Part No.				
			XV-HTD540 /KUCXJ	XV-DV8 /DDXJ/RA	XV-DV8 /DDXJ/RB	XV-DV8 /DLXJ/NC	XV-DV8 /DPWXJ
	3	H. P MIC Assy	XWZ3852	XWZ3853	XWZ3853	XWZ3853	XWZ3853
NSP	5	Front Panel Assy	XXG3176	XXG3177	XXG3177	XXG3177	XXG3177
	7	Display Window	XAK3464	XAK3447	XAK3447	XAK3447	XAK3447
	9	Front Panel	XMB3150	XMB3156	XMB3156	XMB3156	XMB3156
	19	MIC Knob	Not used	XAA3024	XAA3024	XAA3024	XAA3024

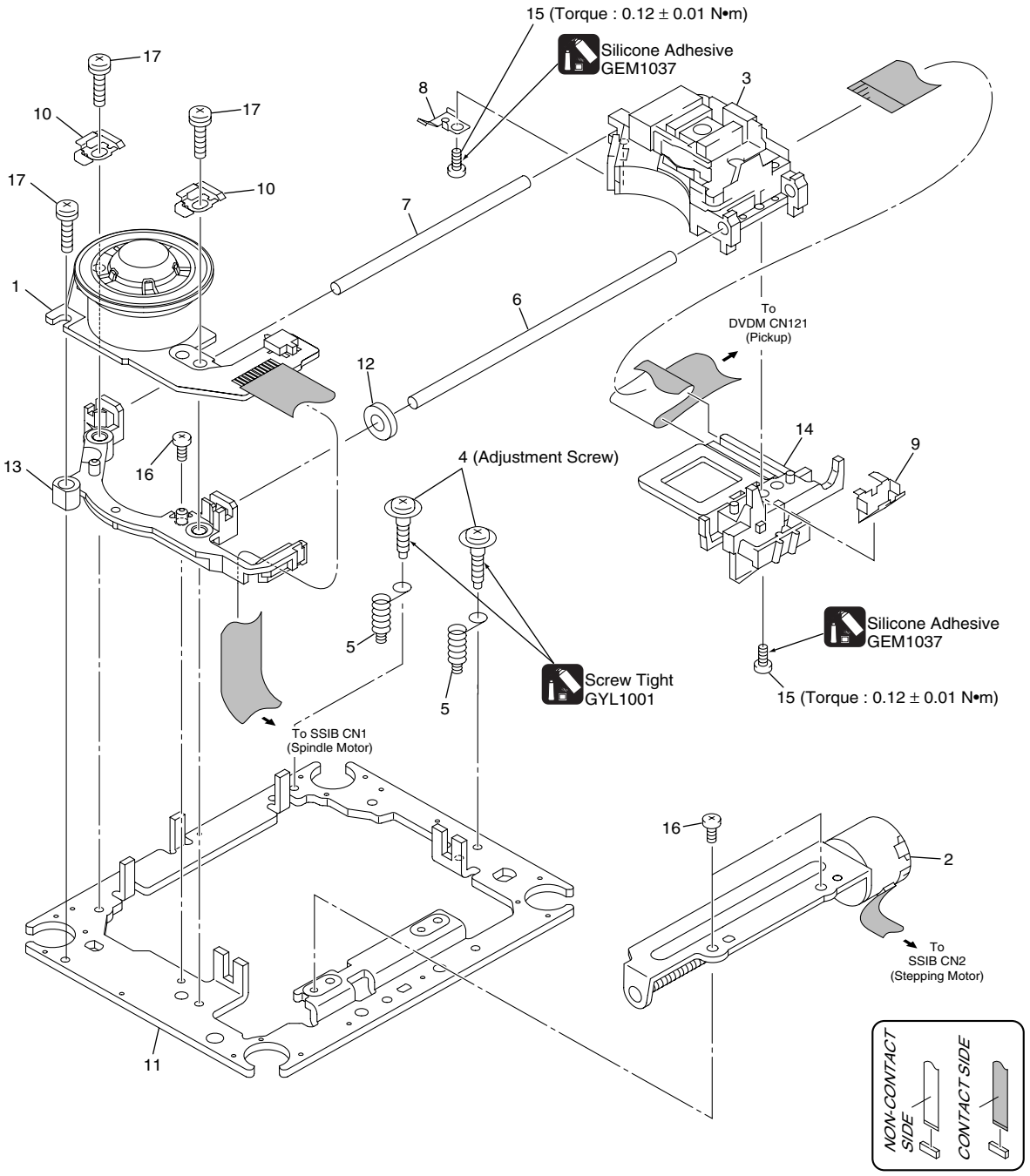
2.4 AMP POWER MODULE



AMP POWER MODULE parts List

Mark	No.	Description	Part No.
	1	6CH AMP Assy (for service)	AZW7283
	2	DC Fan Motor	AXM7025
	3	FET Bracket A	ANG7418
	4	Fan Plate	ANG7462
NSP	5	Heatsink	ANH7166
	6	Screw	BBZ30P140FTC
	7	Screw	BBZ30P300FTC

2.5 TRAVERSE MECHA ASSY 03-S



TRAVERSE MECHA ASSY 03-S parts List

Mark	No.	Description	Part No.
	1	Spindle Motor 04	VXM1112
	2	Stepping Motor 04	VXM1113
	3	Pickup assy-S	OXX8005
	4	Skew Screw 04	VBA1091
	5	Skew Spring	VBH1335
	6	Guide Bar	VLL1514
	7	Sub Guide Bar	VLL1515
	8	Leaf Spring	VNC1023
	9	Joint Spring	VNC1019
	10	Support Spring	VNC1020
NSP	11	Mechanism Chassis 04	VNE2244
	12	Damper Sheet	VEB1335
	13	Spacer	VNL1913
	14	Joint 03	VNL1949
	15	Tapping Screw 04	VBA1092
	16	Screw	BBZ20P050FTC
	17	Screw	PMA26P100FTC

2.6 TABLE MECHANISM SECTION

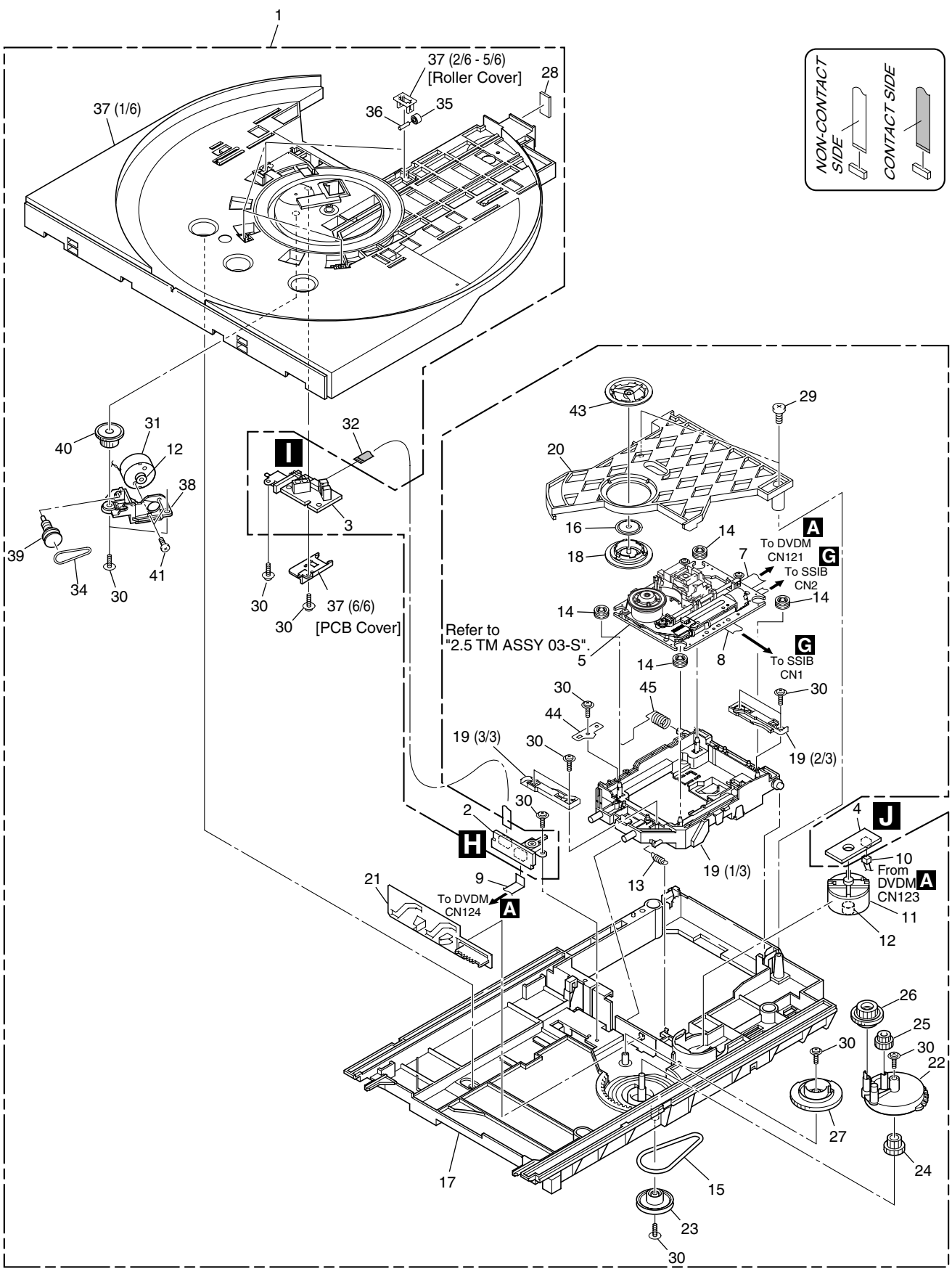
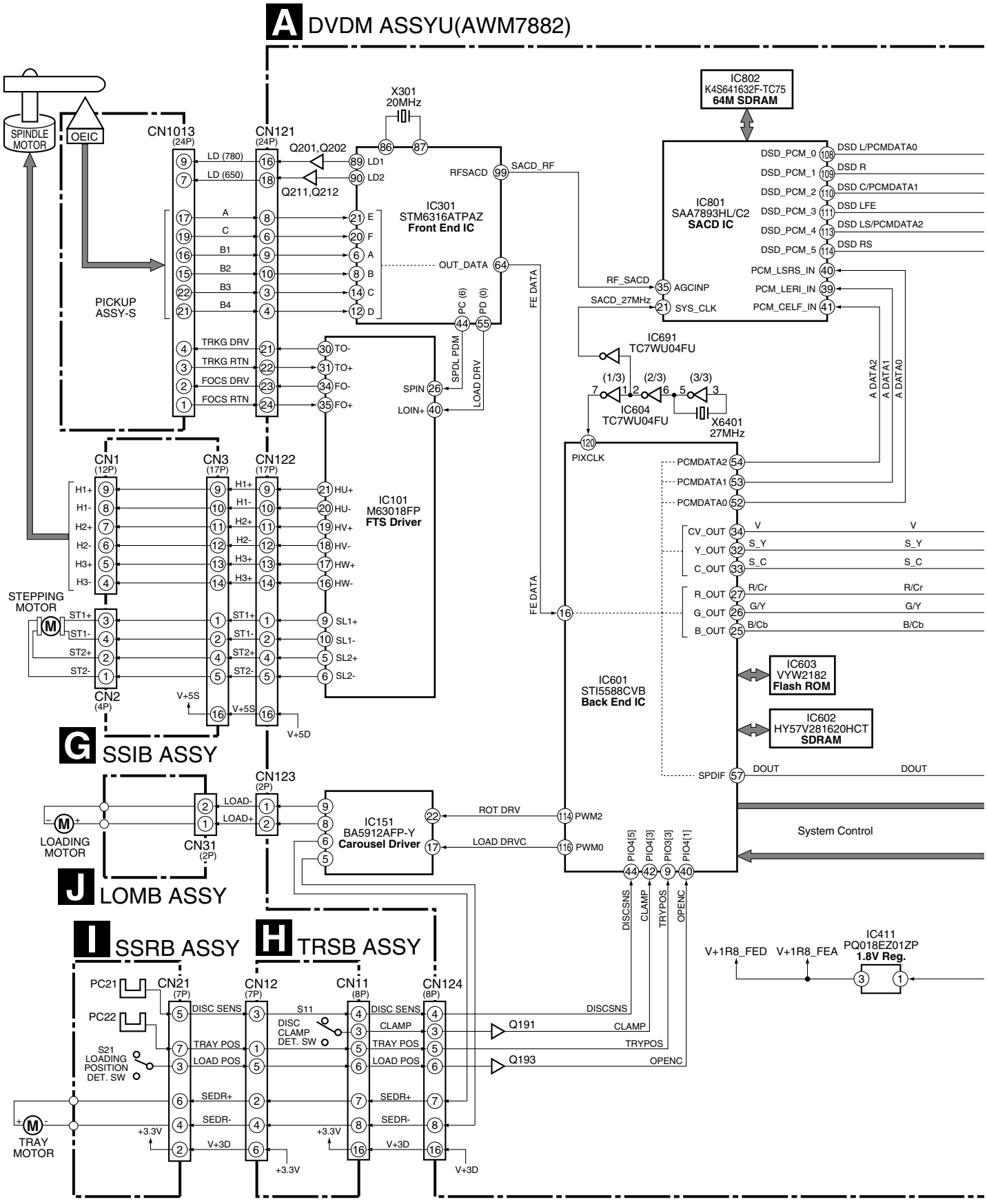


TABLE MECHANISM SECTION parts List

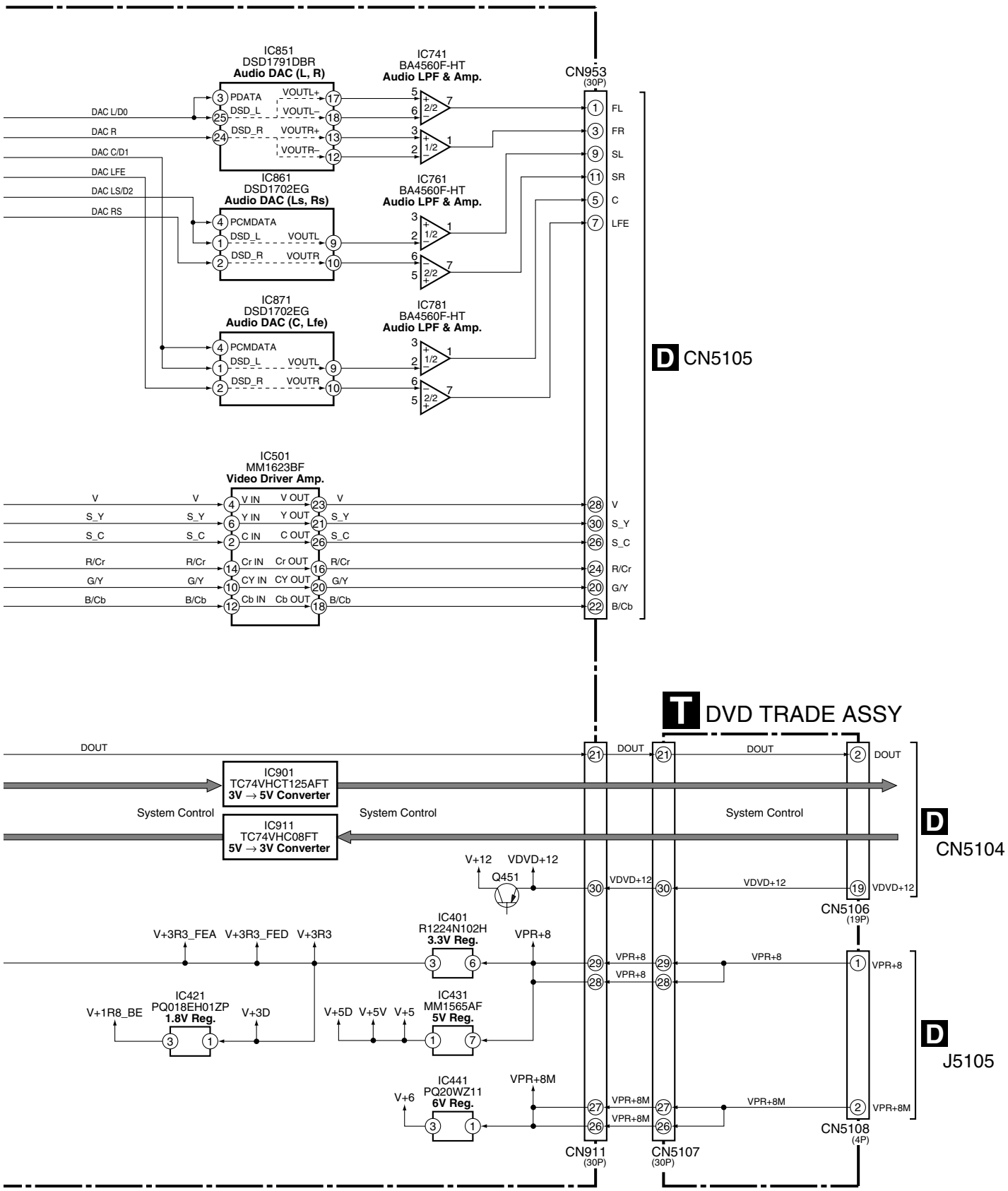
Mark	No.	Description	Part No.
NSP	1	5C Mech. Base Assy	AXA7134
	2	TRSB Assy	XWZ3855
	3	SSRB Assy	XWZ3856
	4	LOMB Assy	XWZ3857
	5	Traverse Mecha. Assy03-S	VXX2909
	6	• • • •	
	7	Flexible Cable 24P	ADD7418
	8	Flexible Cable 17P	ADD7419
	9	Flexible Cable 8P	ADD7420
	10	Housing Assy 2P	VKP2249
	11	Slider Motor (LOADING)	VXM1033
	12	Motor Pulley	PNW3026
	13	Spring	VBH1333
	14	Floating Rubber	VEB1351
	15	Load Belt	VEB1316
	16	Clamper Plate 04	VNE2342
	17	Mech. Base	VNK5556
	18	Clamper	VNL1935
	19	Float Base	VNL1933
	20	Clamper Holder	VNL1939
	21	Clamp Cam	VNL1934
	22	Planet Base	ANW7258
	23	Gear Pulley	ANW7261
	24	Loading Gear (1)	ANW7262
	25	Loading Gear (2)	ANW7263
	26	Drive Gear	ANW7264
	27	Change Gear	ANW7260
	28	CR cushion T2	XEB3020
	29	Screw	VPZ30P100FTC
	30	Screw	VBA1094
	31	Motor (TRAY)	VXM1106
	32	Flexible Cable (7P)	VDA1835
	33	• • • •	
	34	Tray Belt	VEB1317
	35	Rubber Roller	VEB1318
	36	Roller Shaft	VLL1511
	37	Slide Table	VNK5557
	38	Motor Holder	ANW7259
	39	Worm Gear	ANW7269
	40	Tray Gear	ANW7265
	41	Screw	JGZ17P028FMC
	42	• • • • •	
	43	Cap	VNL1936
	44	TM Stopper	ANG7460
	45	Thrust Spring	VBH1339

3. BLOCK DIAGRAM AND SCHEMATIC DIAGRAM

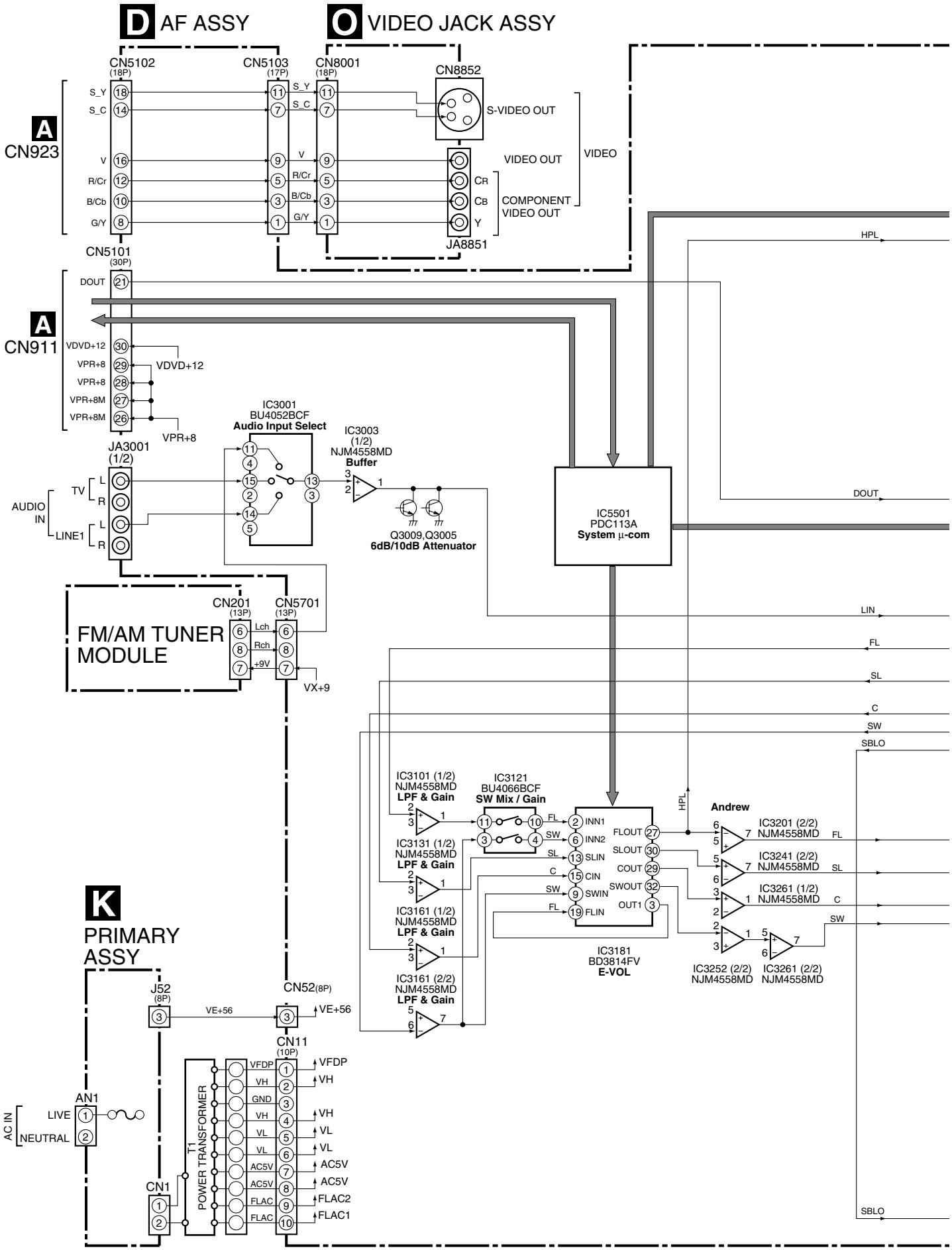
3.1 BLOCK DIAGRAM DVD SECTION

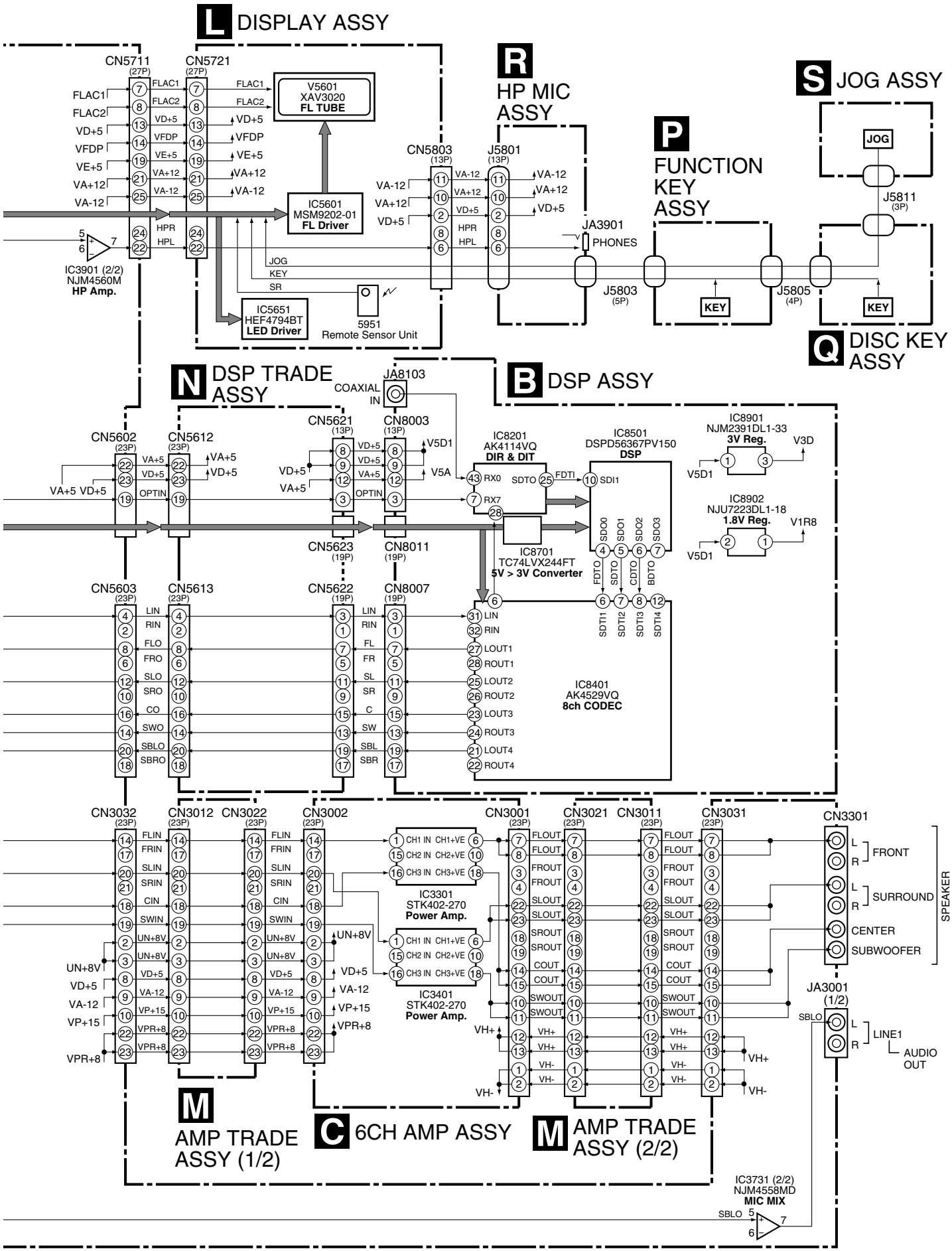


XV-HTD540

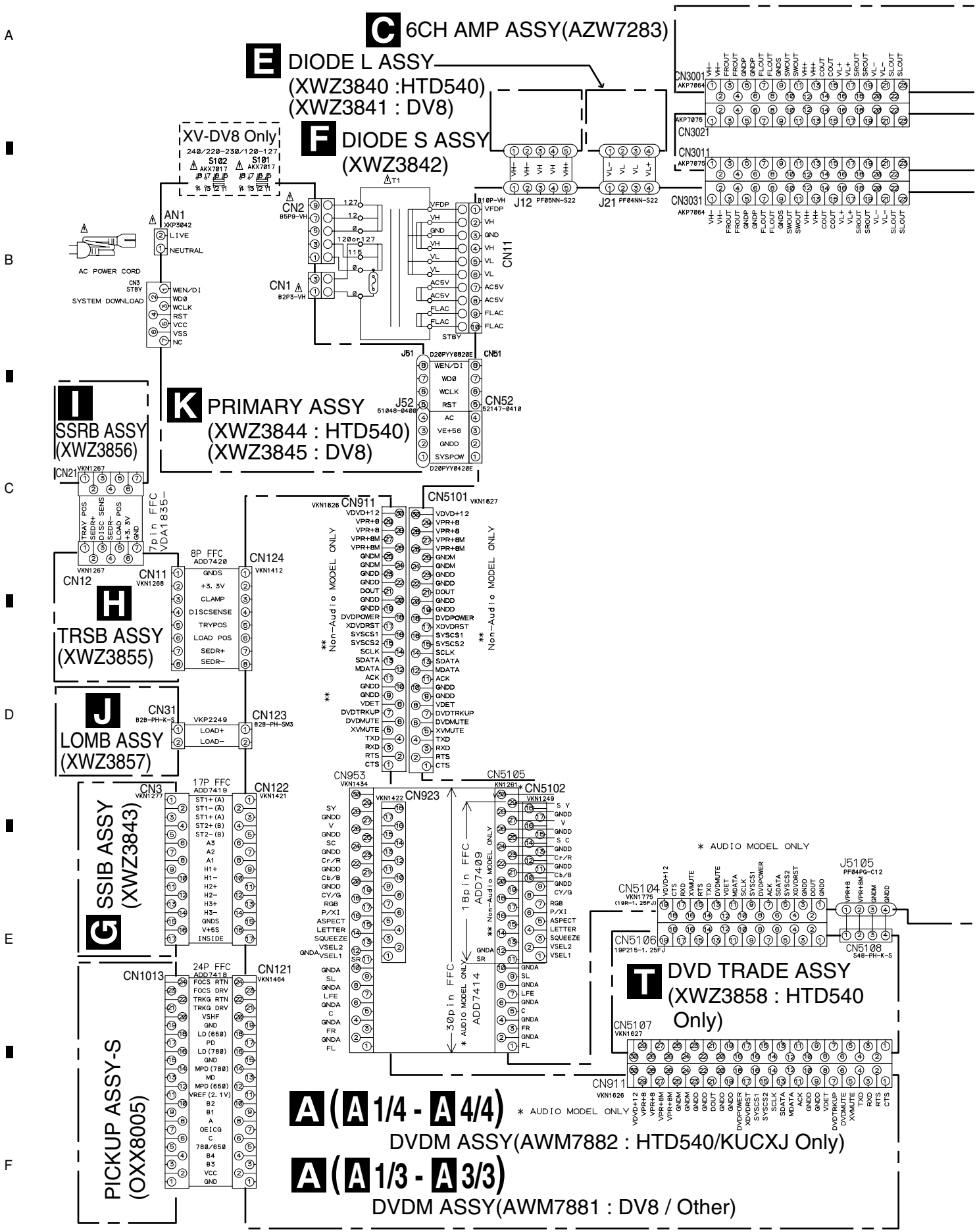

IC851
DSD1791DBR
Audio DAC (L, R)
IC741
BA4560F-HT
Audio LPF & Amp.
CN953
(30P)
DAC L/D0
DAC R
DAC C/D1
DAC LFE
DAC LS/D2
DAC RS
PDATA
DSD_L
DSD_R
VOUTL+
VOUTL–
VOUTR+
VOUTR–
FL
FR
SL
SR
C
LFE
IC861
DSD1702EG
Audio DAC (Ls, Rs)
IC761
BA4560F-HT
Audio LPF & Amp.
PCMDATA
VOUTL
VOUTR
IC871
DSD1702EG
Audio DAC (C, Lfe)
IC781
BA4560F-HT
Audio LPF & Amp.
D CN5105
IC501
MM1623BF
Video Driver Amp.
V IN
Y IN
C IN
Cr IN
CY IN
Cb IN
V OUT
Y OUT
C OUT
Cr OUT
CY OUT
Cb OUT
V
S_Y
S_C
R/Cr
G/Y
B/Cb
T DVD TRADE ASSY
DOUT
IC901
TC74VHCT125AFT
3V → 5V Converter
IC911
TC74VHC08FT
5V → 3V Converter
System Control
D CN5104
V+12
VDVD+12
Q451
CN5106
(19P)
IC401
R1224N102H
3.3V Reg.
V+3R3_FEA
V+3R3_FED
V+3R3
VPR+8
IC421
PQ018EH01ZP
1.8V Reg.
V+1R8_BE
V+3D
IC431
MM1565AF
5V Reg.
V+5D
V+5V
V+5
D J5105
IC441
PQ20WZ11
6V Reg.
V+6
VPR+8M
CN911
(30P)
CN5107
(30P)
CN5108
(4P)

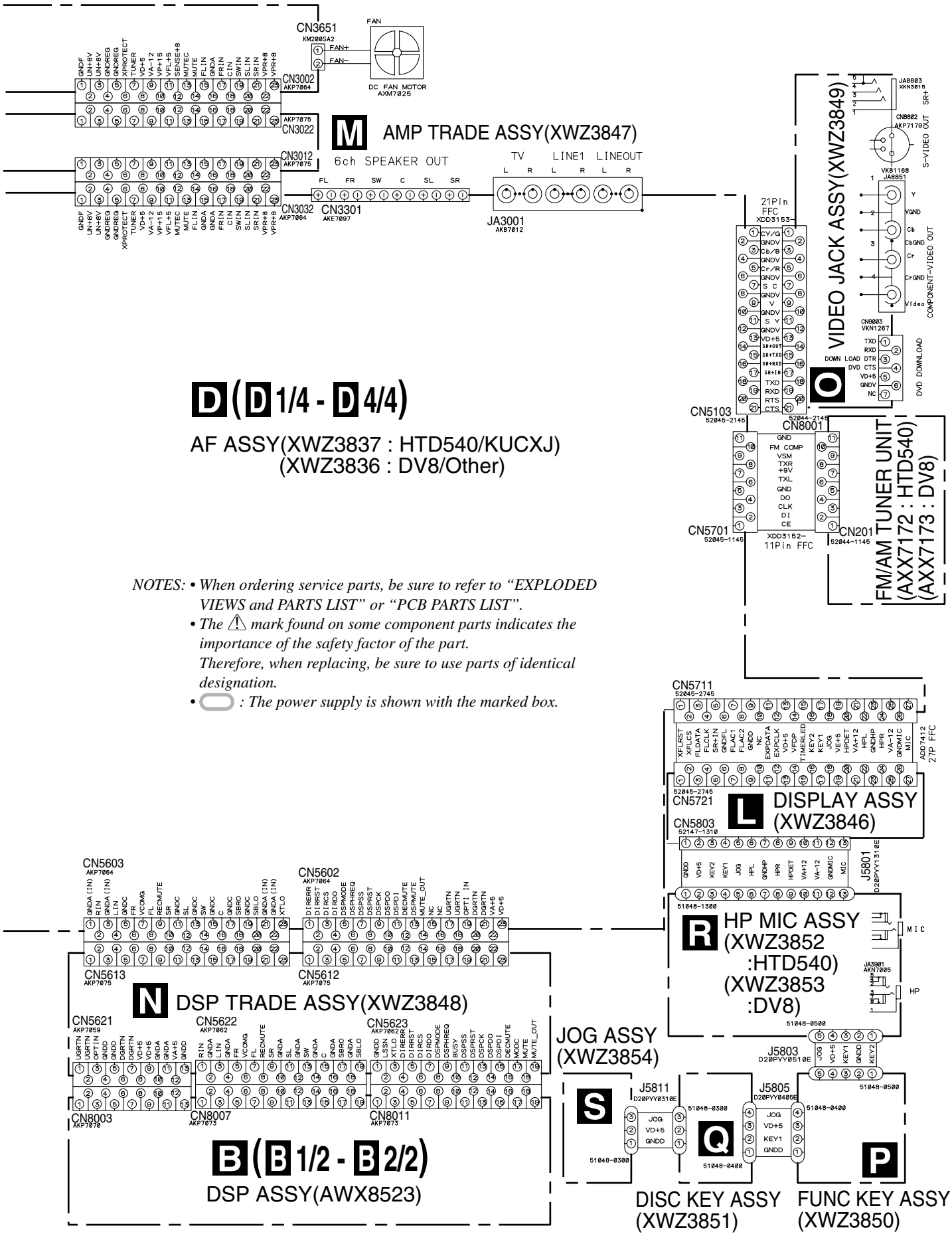
3.2 BLOCK DIAGRAM MAIN SECTION




L DISPLAY ASSY
CN5711 (27P)
CN5721 (27P)
FLAC1
FLAC2
VD+5
VFDP
VE+5
VA+12
VA-12
V5601
XAV3020
FL TUBE
IC5601
MSM9202-01
FL Driver
HPR
HPL
IC3901 (2/2)
NJM4560M
HP Amp.
JOG
KEY
SR
IC5651
HEF4794BT
LED Driver
5951
Remote Sensor Unit
R HP MIC ASSY
CN5803 (13P)
J5801 (13P)
JA3901
PHONES
J5803 (5P)
P FUNCTION KEY ASSY
KEY
J5805 (4P)
S JOG ASSY
JOG
J5811 (3P)
Q DISC KEY ASSY
N DSP TRADE ASSY
JA8103
COAXIAL IN
CN5602 (23P)
CN5612 (23P)
CN5621 (13P)
CN8003 (13P)
OPTIN
V5D1
V5A
B DSP ASSY
IC8201
AK4114VQ
DIR & DIT
RX0
RX7
SDTO
FDTI
IC8501
DSPD56367PV150
DSP
SDI1
SDO0
SDO1
SDO2
SDO3
IC8901
NJM2391DL1-33
3V Reg.
V3D
IC8902
NJU7223DL1-18
1.8V Reg.
V1R8
CN5623 (19P)
CN8011 (19P)
IC8701
TC74LVX244FT
5V > 3V Converter
FDTO
SDTO
CDTO
BDTO
SDTI1
SDTI2
SDTI3
SDTI4
CN5603 (23P)
CN5613 (23P)
CN5622 (19P)
CN8007 (19P)
LIN
RIN
FLO
FRO
SLO
SRO
CO
SWO
SBLO
SBRO
FL
FR
SL
SR
C
SW
SBL
SBR
LOUT1
ROUT1
LOUT2
ROUT2
LOUT3
ROUT3
LOUT4
ROUT4
IC8401
AK4529VQ
8ch CODEC
CN3032 (23P)
CN3012 (23P)
CN3022 (23P)
CN3002 (23P)
CN3001 (23P)
CN3021 (23P)
CN3011 (23P)
CN3031 (23P)
CN3301
FLIN
FRIN
SLIN
SRIN
CIN
SWIN
UN+8V
VP+15
VPR+8
CH1 IN CH1+VE
CH2 IN CH2+VE
CH3 IN CH3+VE
IC3301
STK402-270
Power Amp.
IC3401
STK402-270
Power Amp.
FLOUT
FROUT
SLOUT
SROUT
COUT
SWOUT
VH+
VH-
SPEAKER
FRONT
SURROUND
CENTER
SUBWOOFER
JA3001 (1/2)
LINE1
AUDIO OUT
M AMP TRADE ASSY (1/2)
C 6CH AMP ASSY
M AMP TRADE ASSY (2/2)
IC3731 (2/2)
NJM4558MD
MIC MIX

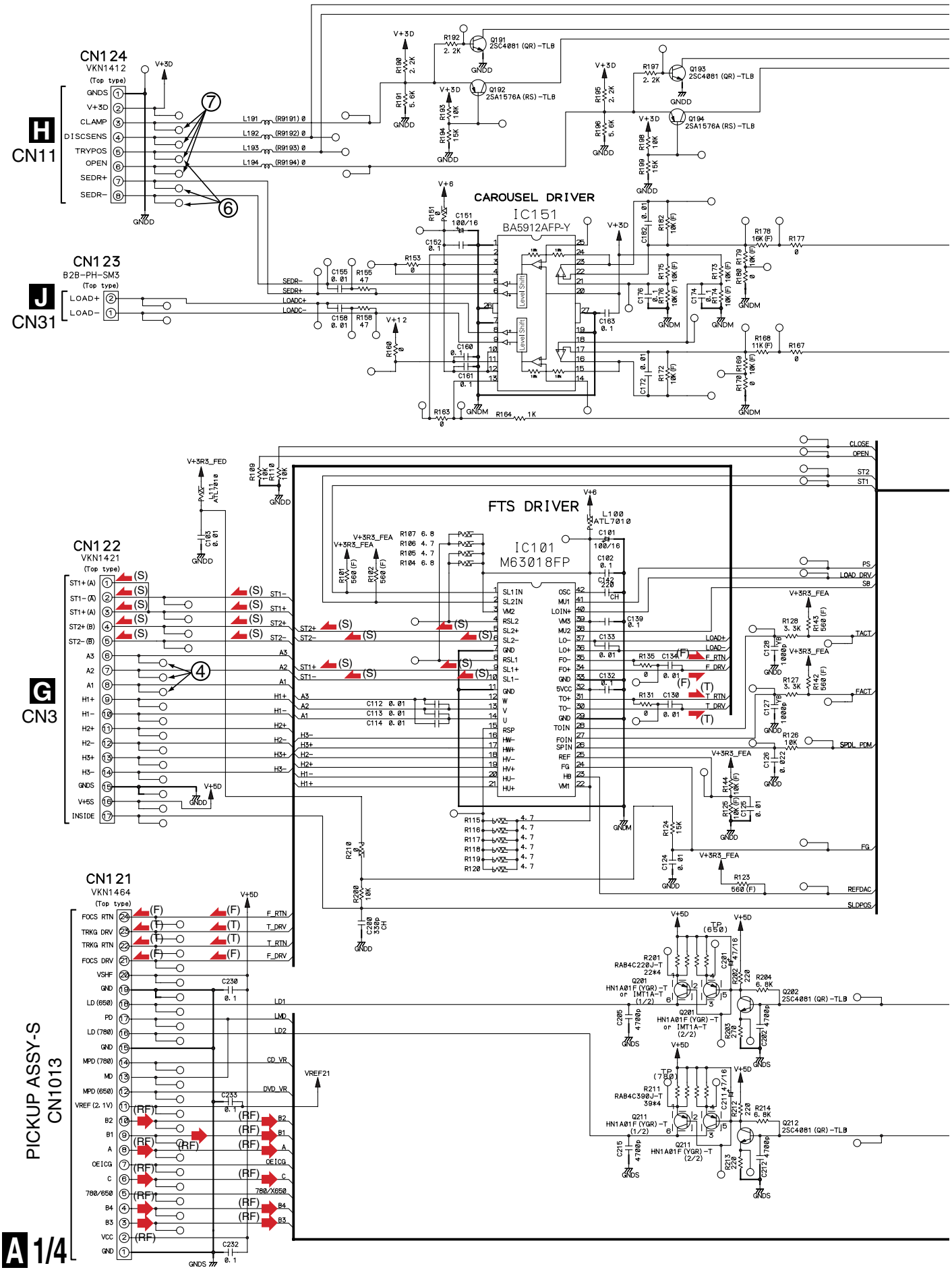
3.3 OVERALL WIRING DIAGRAM





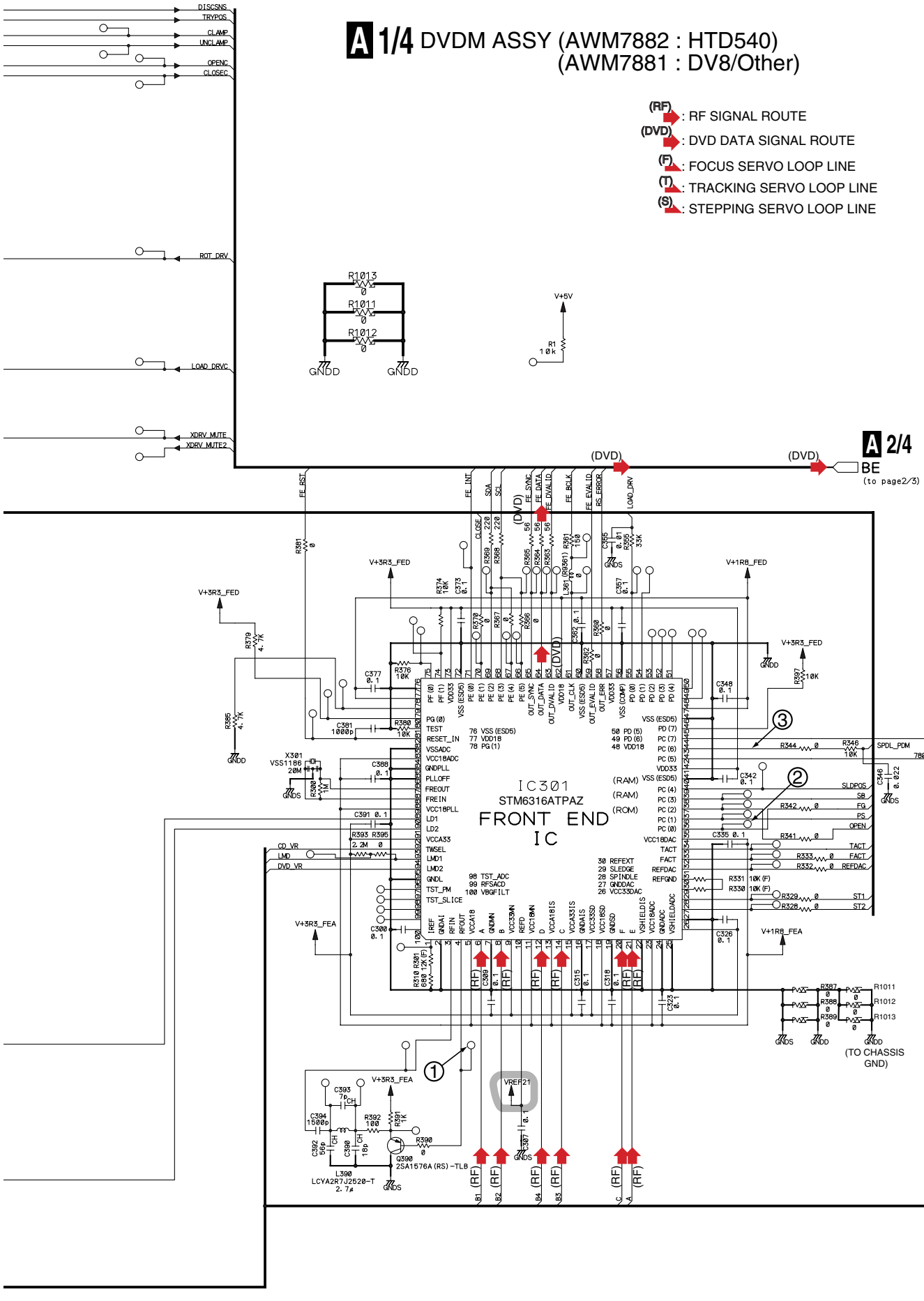
NOTES:
- *When ordering service parts, be sure to refer to "EXPLODED VIEWS and PARTS LIST" or "PCB PARTS LIST".*
- *The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.*
- *: The power supply is shown with the marked box.*

3.4 DVDM ASSY (1/4)

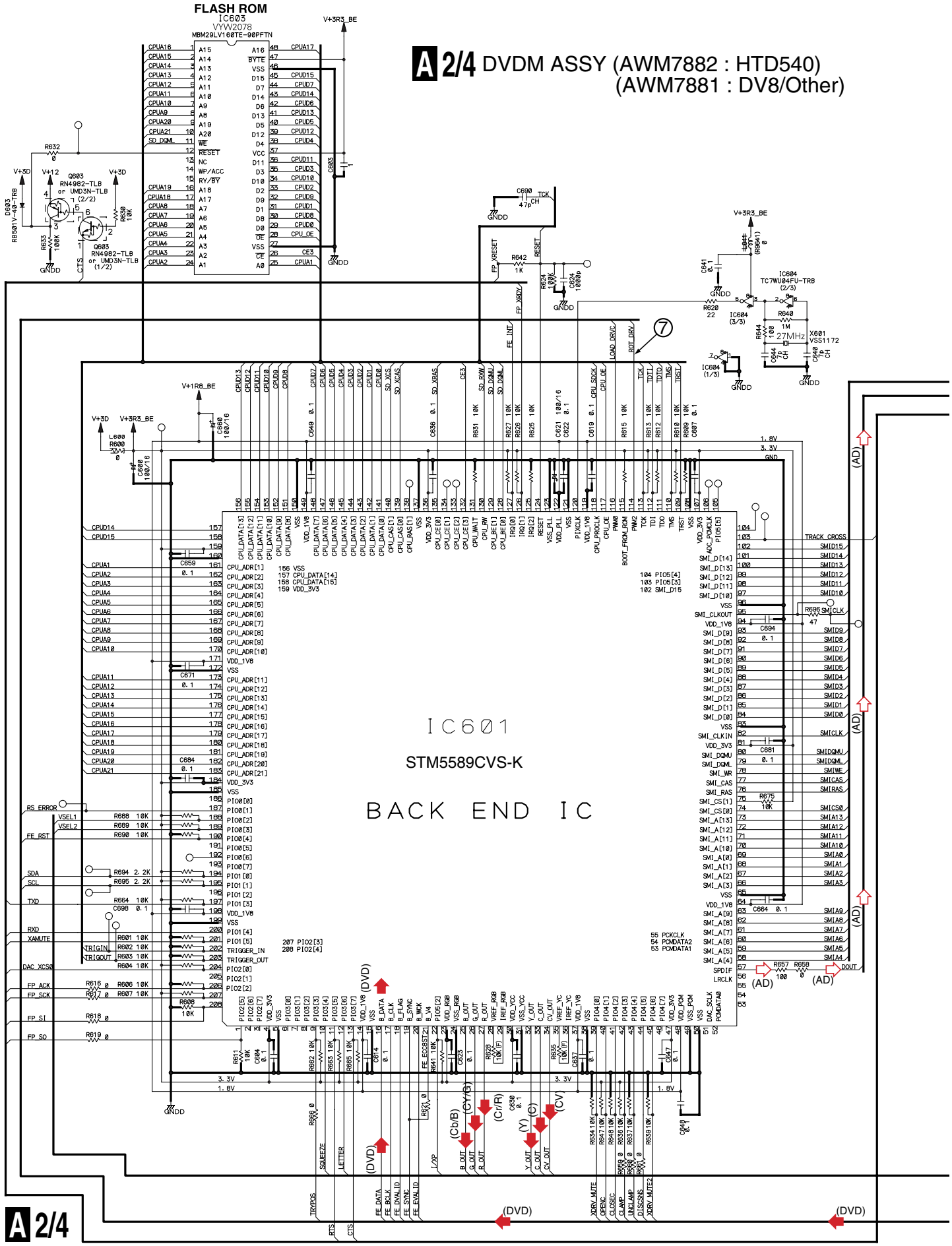


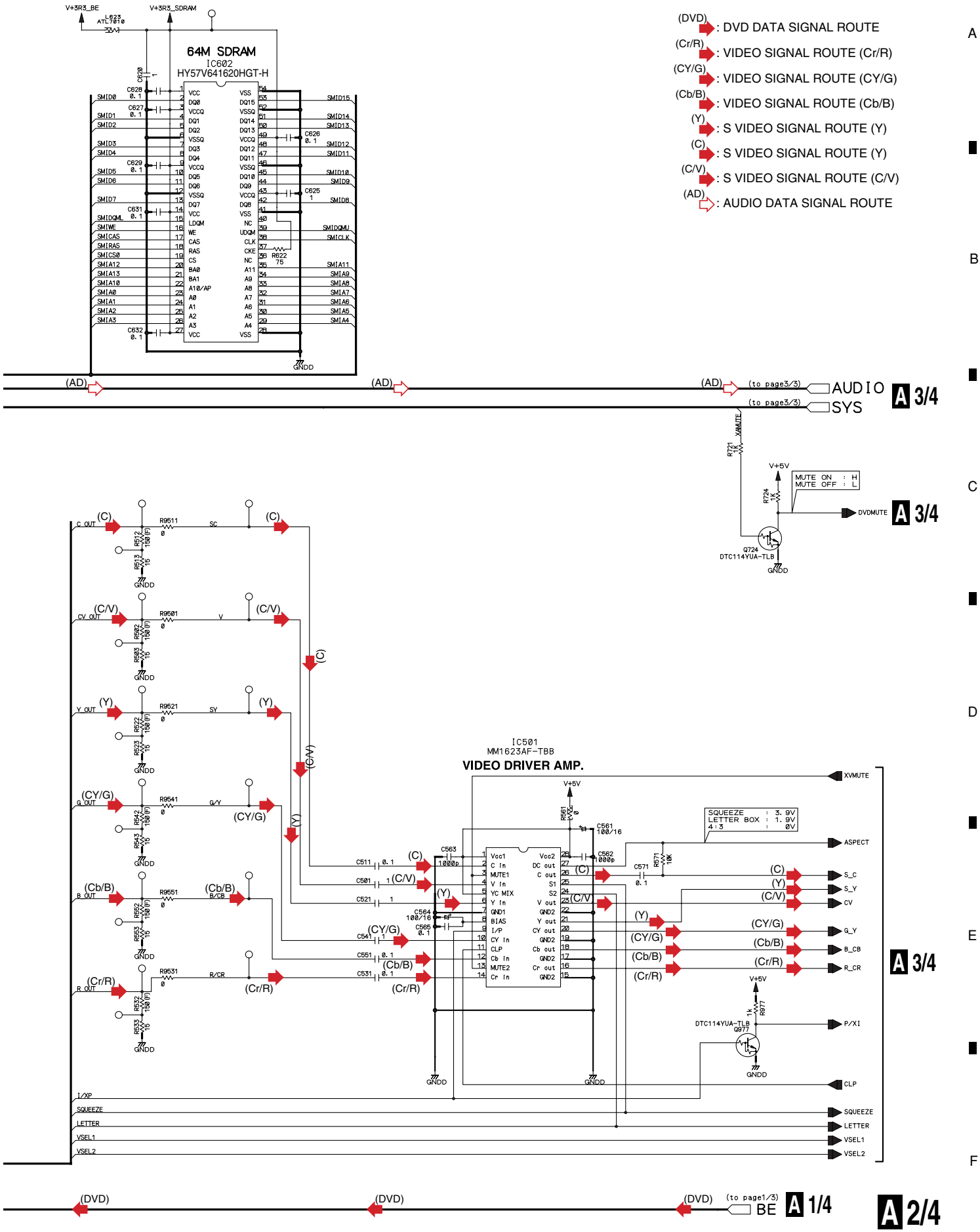
A 1/4 DVDM ASSY (AWM7882 : HTD540)
(AWM7881 : DV8/Other)

(RF) : RF SIGNAL ROUTE
(DVD) : DVD DATA SIGNAL ROUTE
(F) : FOCUS SERVO LOOP LINE
(T) : TRACKING SERVO LOOP LINE
(S) : STEPPING SERVO LOOP LINE

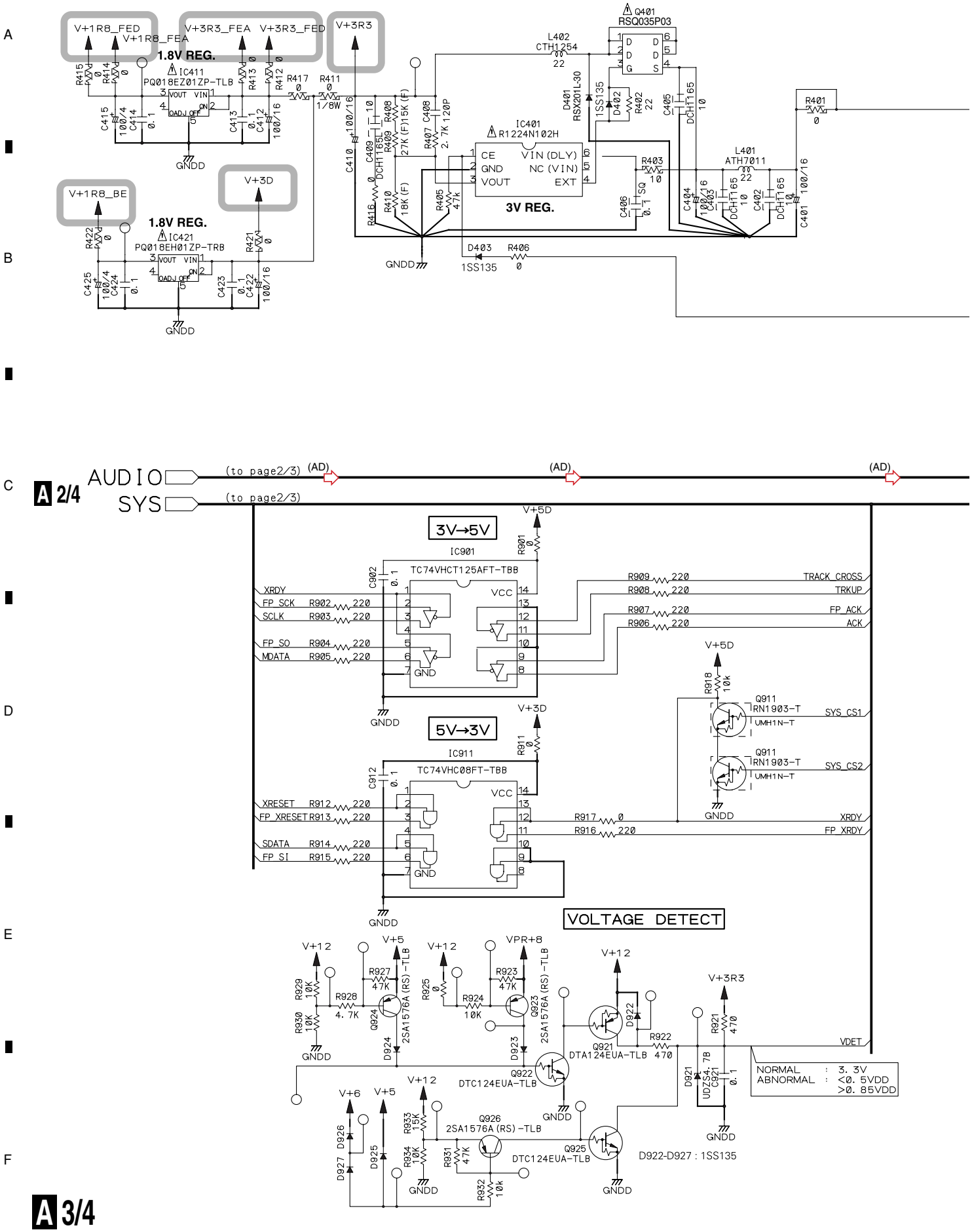


3.5 DVDM ASSY (2/4)

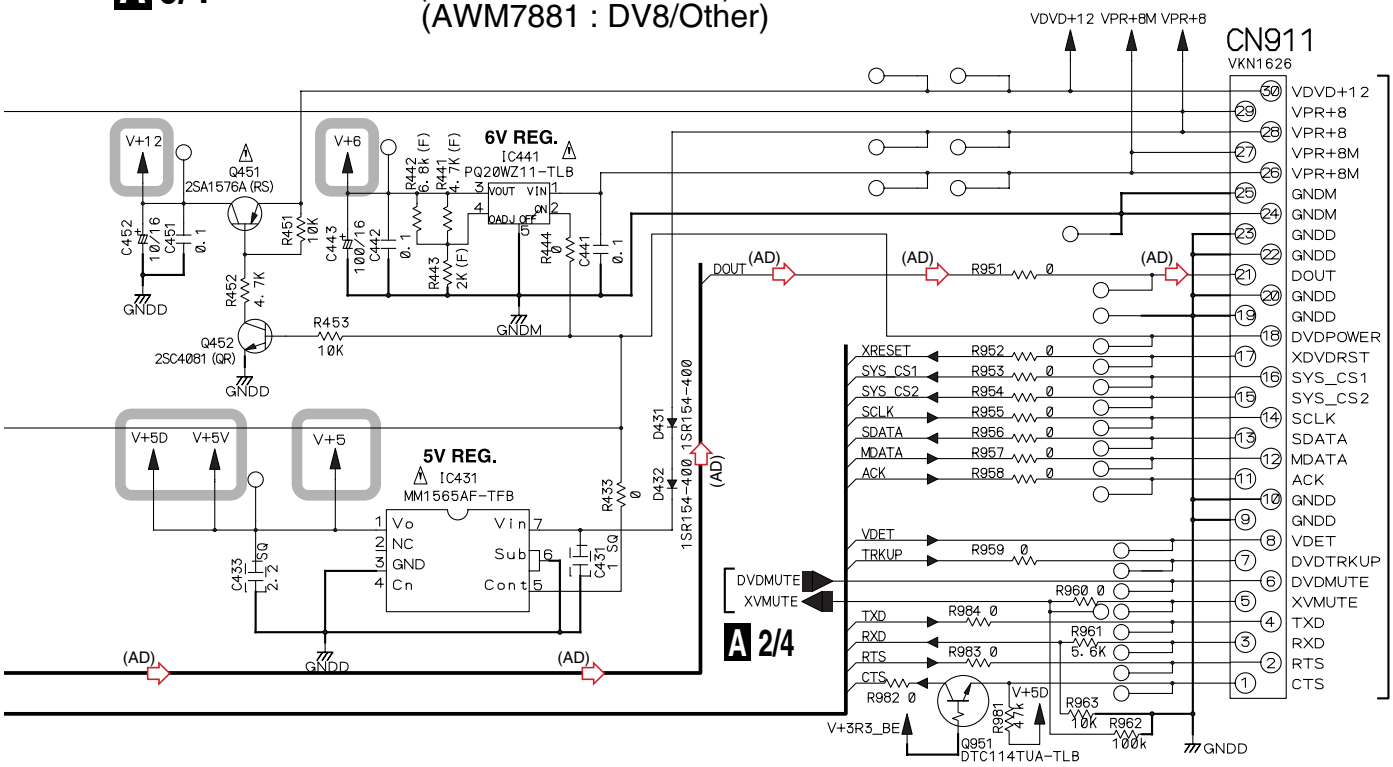


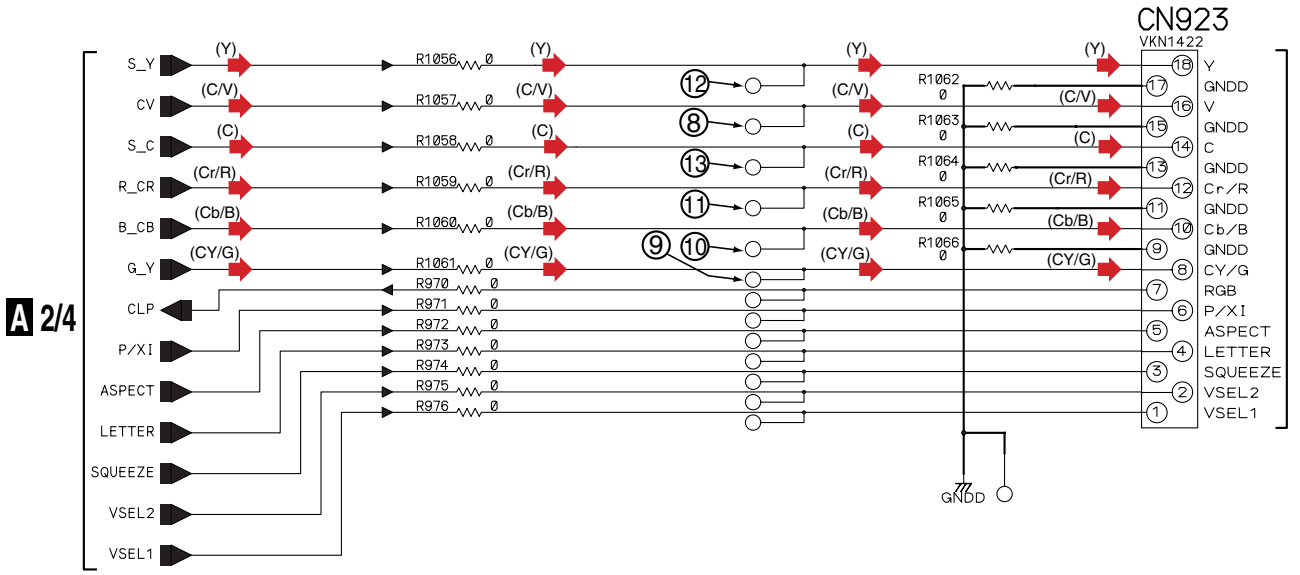

(DVD) : DVD DATA SIGNAL ROUTE
(Cr/R) : VIDEO SIGNAL ROUTE (Cr/R)
(CY/G) : VIDEO SIGNAL ROUTE (CY/G)
(Cb/B) : VIDEO SIGNAL ROUTE (Cb/B)
(Y) : S VIDEO SIGNAL ROUTE (Y)
(C) : S VIDEO SIGNAL ROUTE (Y)
(C/V) : S VIDEO SIGNAL ROUTE (C/V)
(AD) : AUDIO DATA SIGNAL ROUTE
64M SDRAM
IC602
HY57V641620HGT-H
V+3R3_BE
V+3R3_SDRAM
(AD)
(to page3/3)
AUDIO SYS
A 3/4
XAMUTE
V+5V
MUTE ON : H
MUTE OFF : L
DVDMUTE
Q724
DTC114YUA-TLB
GNDD
IC501
MM1623AF-TBB
VIDEO DRIVER AMP.
SQUEEZE : 3.9V
LETTER BOX : 1.9V
4:3 : 0V
XVMUTE
ASPECT
S_C
S_Y
CV
G_Y
B_CB
R_CR
P/XI
CLP
SQUEEZE
LETTER
VSEL1
VSEL2
I/XP
(DVD)
(to page1/3)
BE
A 1/4
A 2/4

3.6 DVDM ASSY (3/4)



A 3/4 DVDM ASSY (AWM7882 : HTD540)
(AWM7881 : DV8/Other)

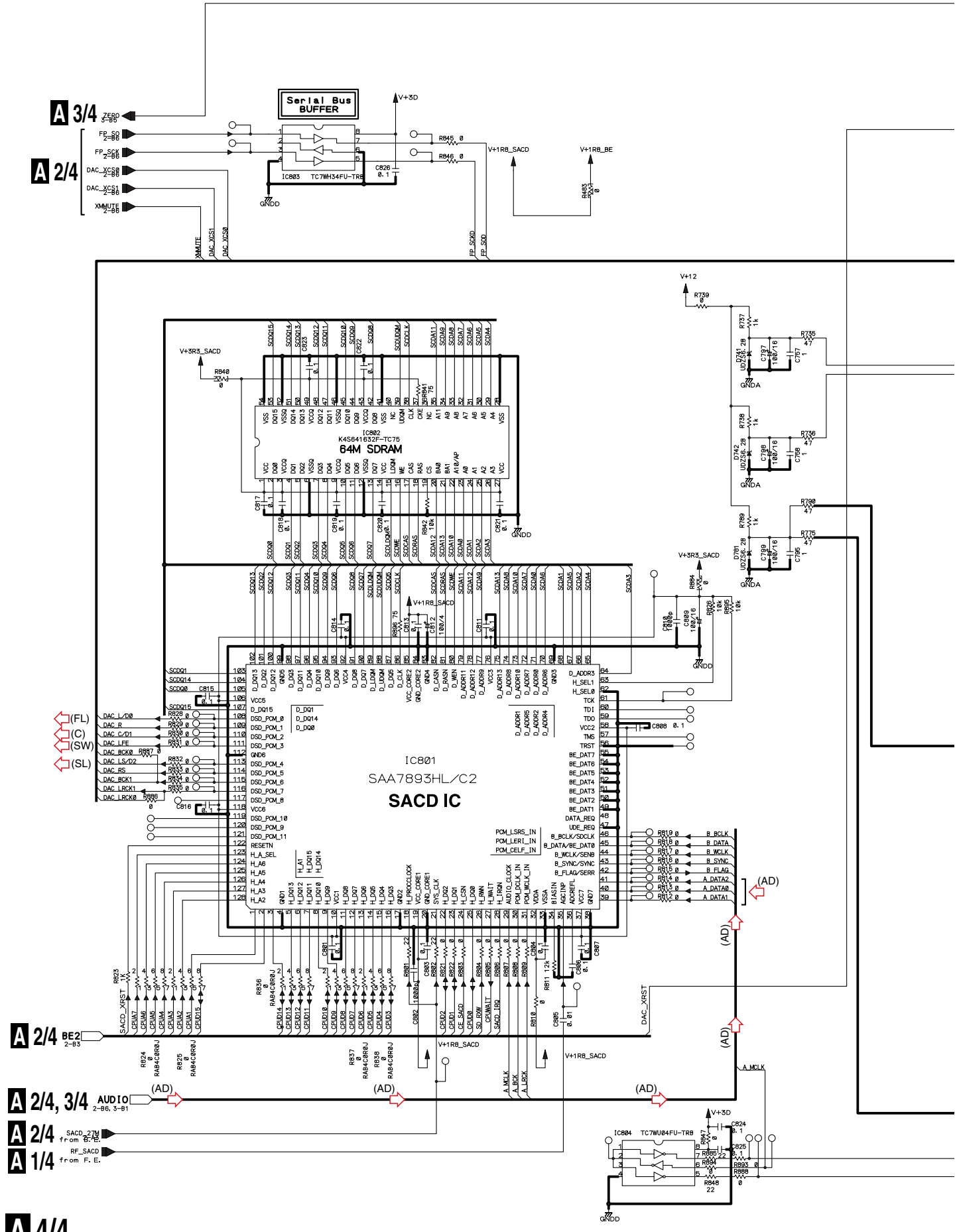




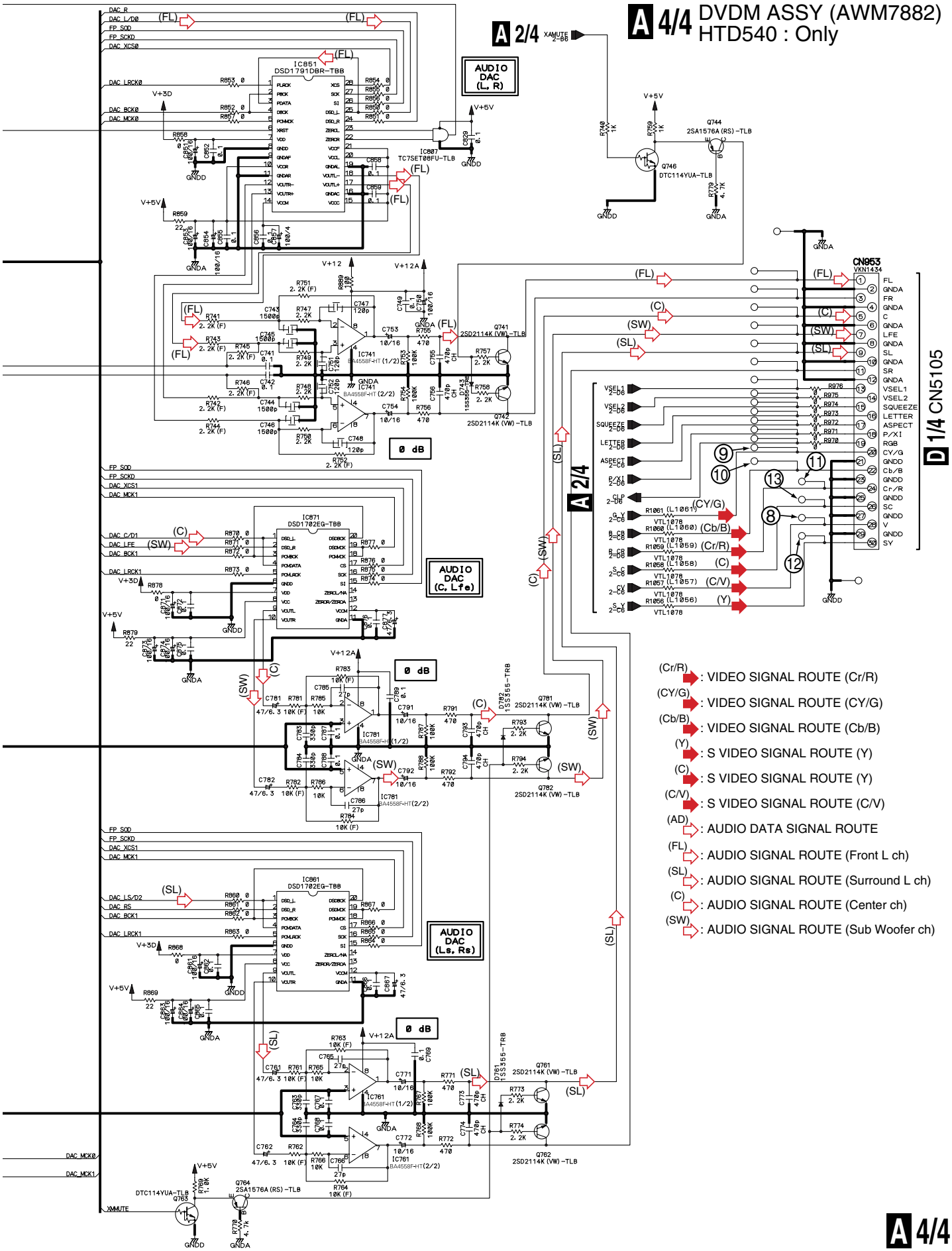
(Cr/R) : VIDEO SIGNAL ROUTE (Cr/R)
(CY/G) : VIDEO SIGNAL ROUTE (CY/G)
(Cb/B) : VIDEO SIGNAL ROUTE (Cb/B)
(Y) : S VIDEO SIGNAL ROUTE (Y)
(C) : S VIDEO SIGNAL ROUTE (Y)
(C/V) : S VIDEO SIGNAL ROUTE (C/V)
(AD) : AUDIO DATA SIGNAL ROUTE

A 3/4

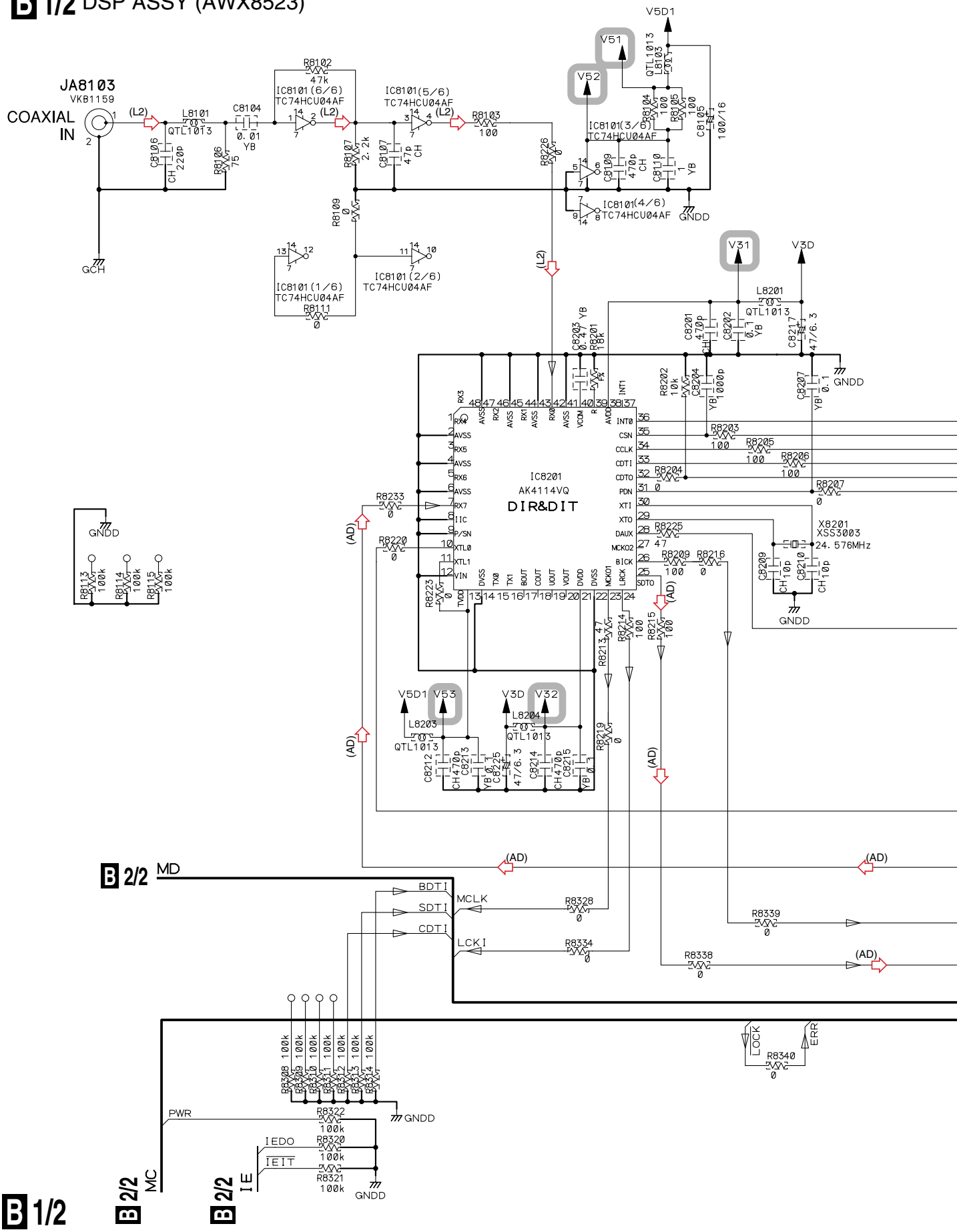
3.7 DVDM ASSY (4/4) HTD540 Only

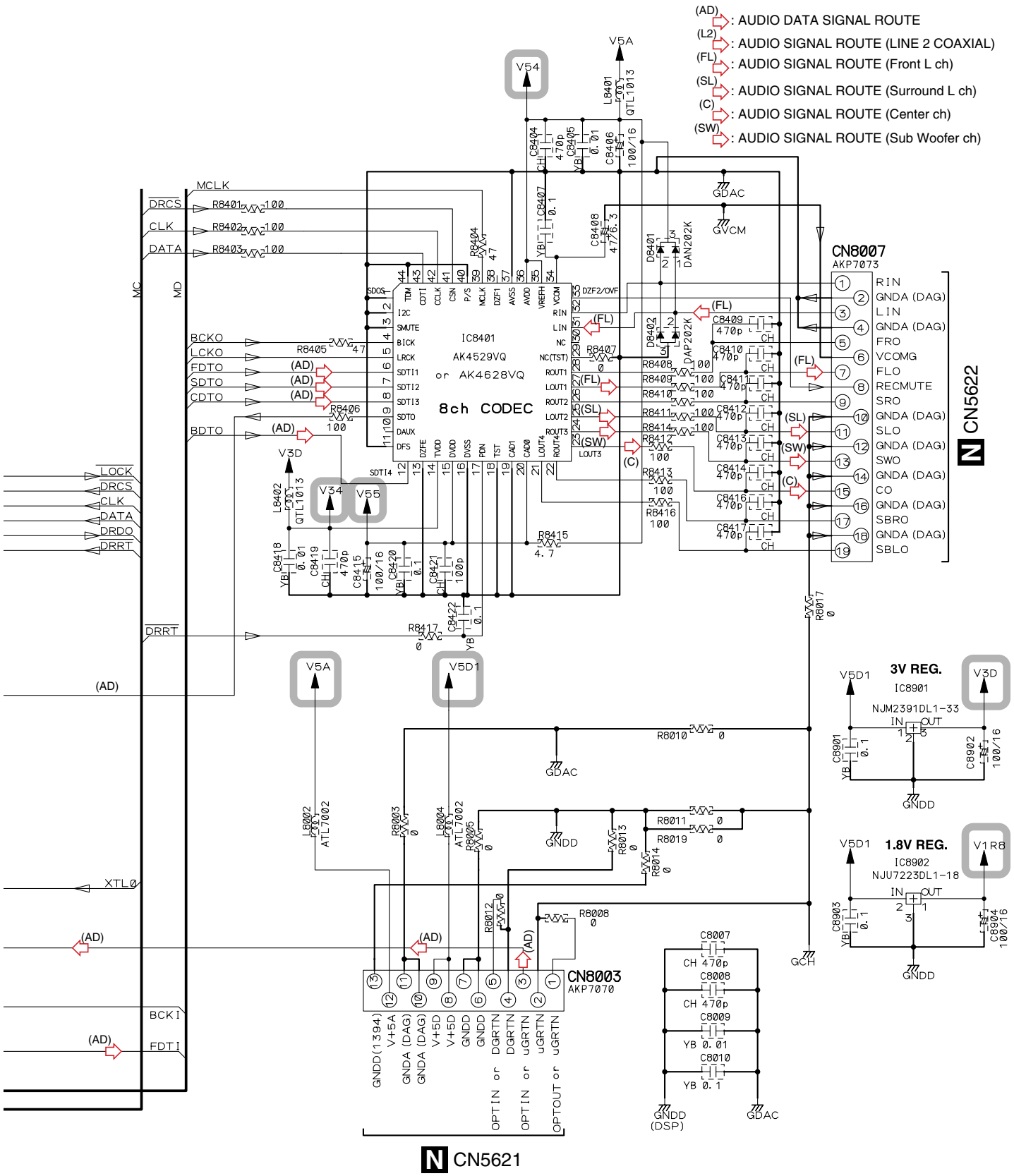


A 4/4 DVDM ASSY (AWM7882) HTD540 : Only



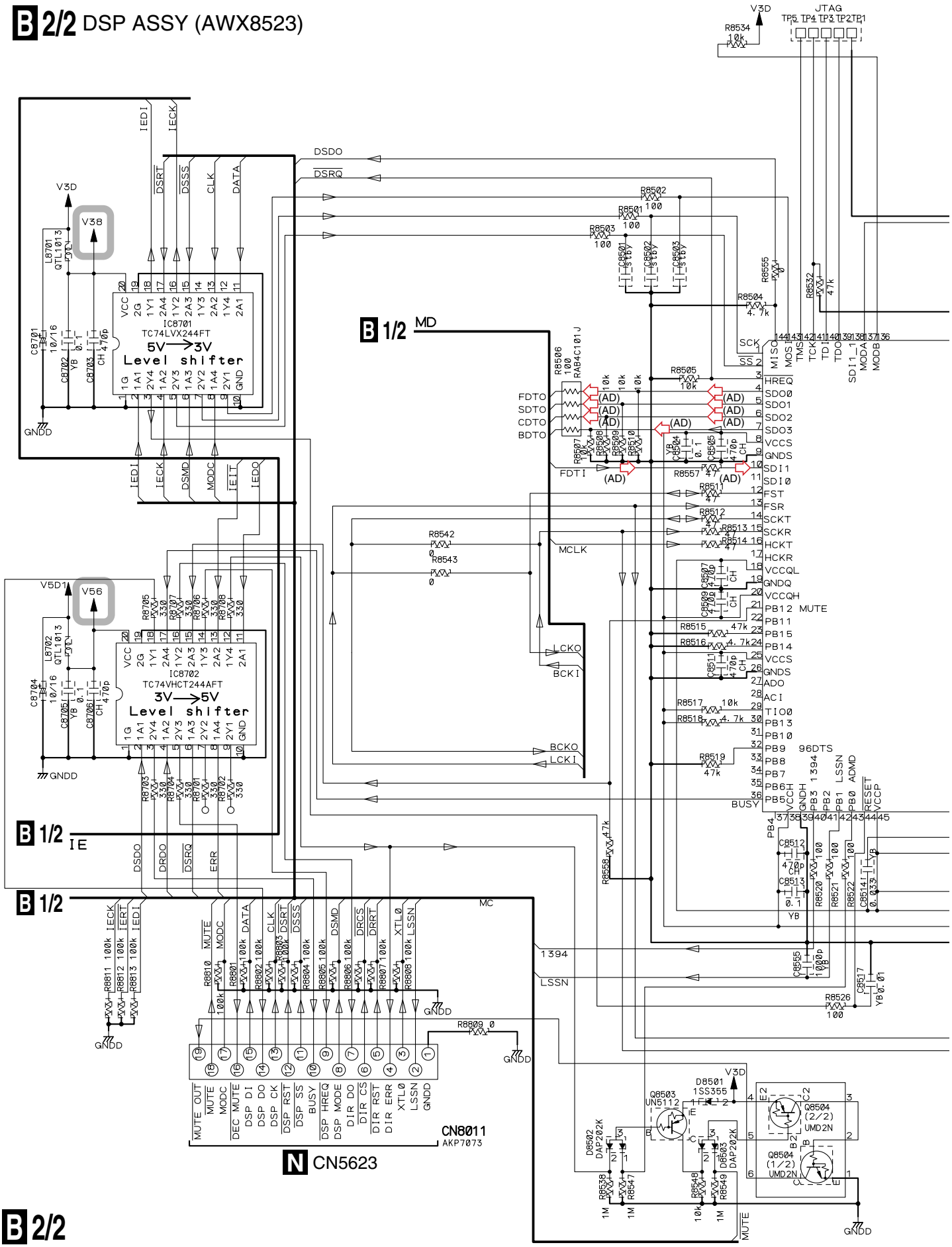
B 1/2 DSP ASSY (AWX8523)



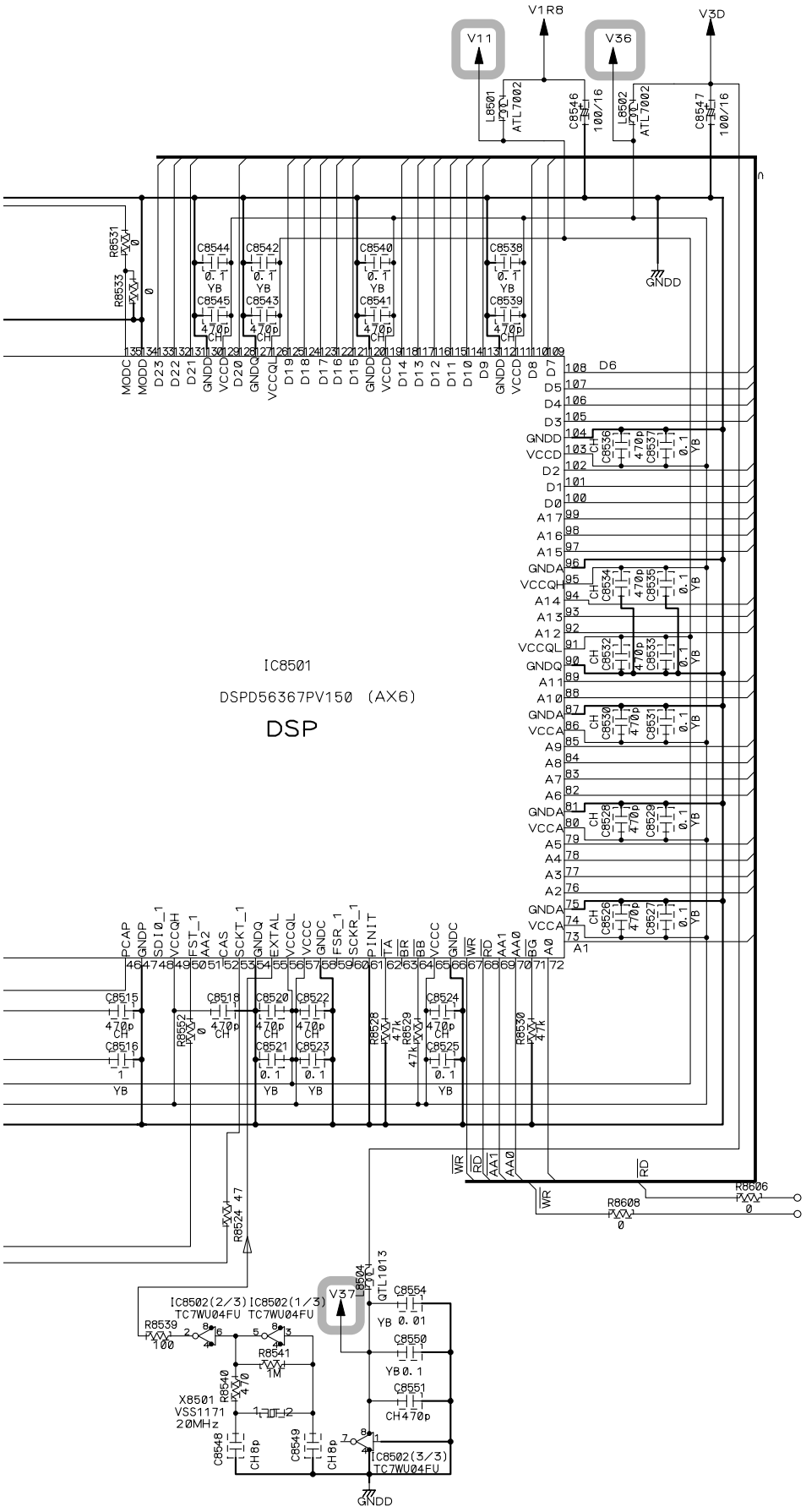

(AD): AUDIO DATA SIGNAL ROUTE
(L2): AUDIO SIGNAL ROUTE (LINE 2 COAXIAL)
(FL): AUDIO SIGNAL ROUTE (Front L ch)
(SL): AUDIO SIGNAL ROUTE (Surround L ch)
(C): AUDIO SIGNAL ROUTE (Center ch)
(SW): AUDIO SIGNAL ROUTE (Sub Woofer ch)
IC8401
AK4529VQ
or AK4628VQ
8ch CODEC
CN8007
AKP7073
CN5622
CN8003
AKP7070
CN5621
3V REG.
IC8901
NJM2391DL1-33
1.8V REG.
IC8902
NJU7223DL1-18
MCLK
DRCS
CLK
DATA
BCKO
LCKO
FDTO
SDTO
CDTO
BDTO
LOCK
DRDO
DRRT
XTL0
BCKI
FDTI
V5A
V5D1
V3D
V1R8
GDAC
GVCM
GCH
GNDD
GNDD (DSP)

3.9 DSP ASSY (2/2)

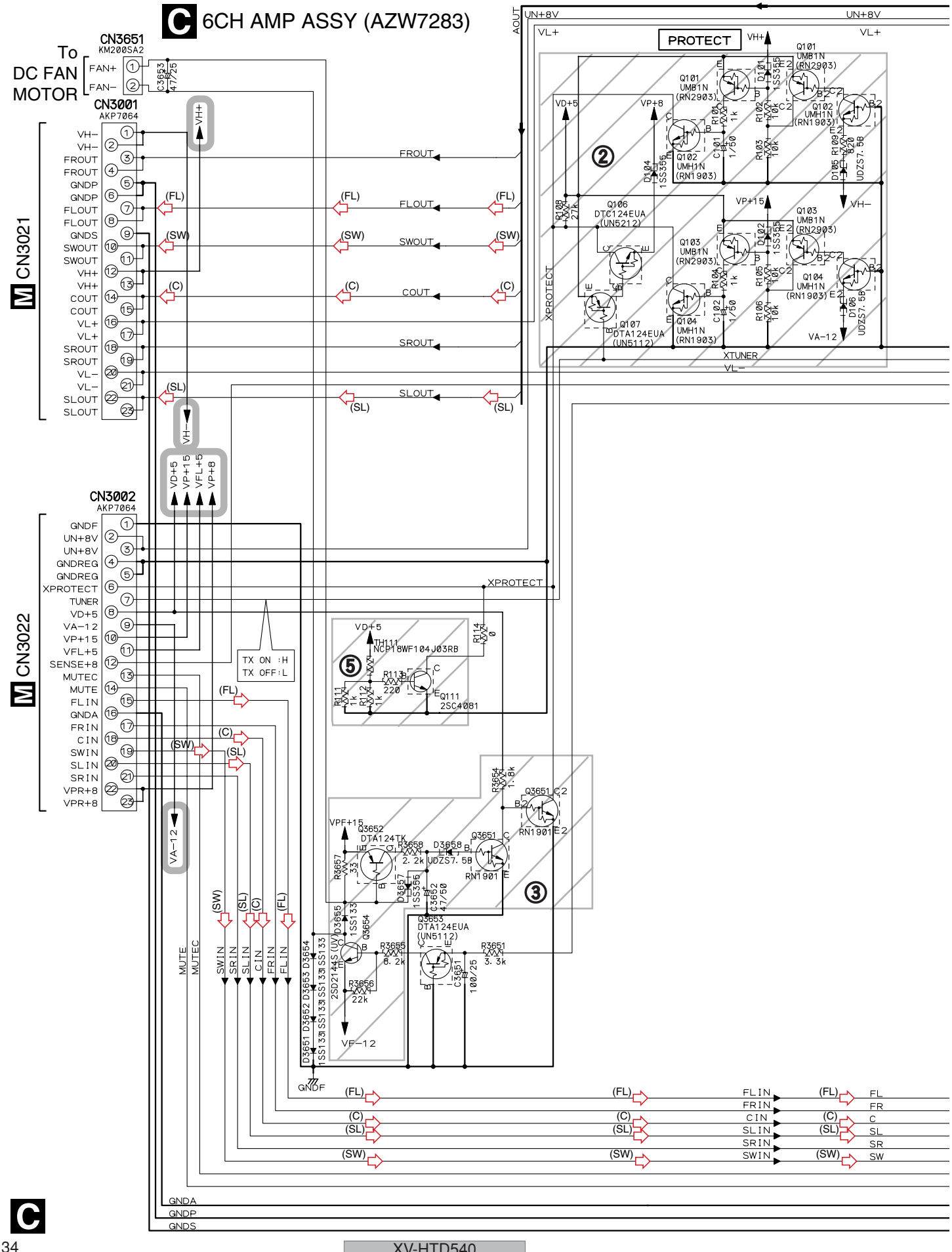
B 2/2 DSP ASSY (AWX8523)

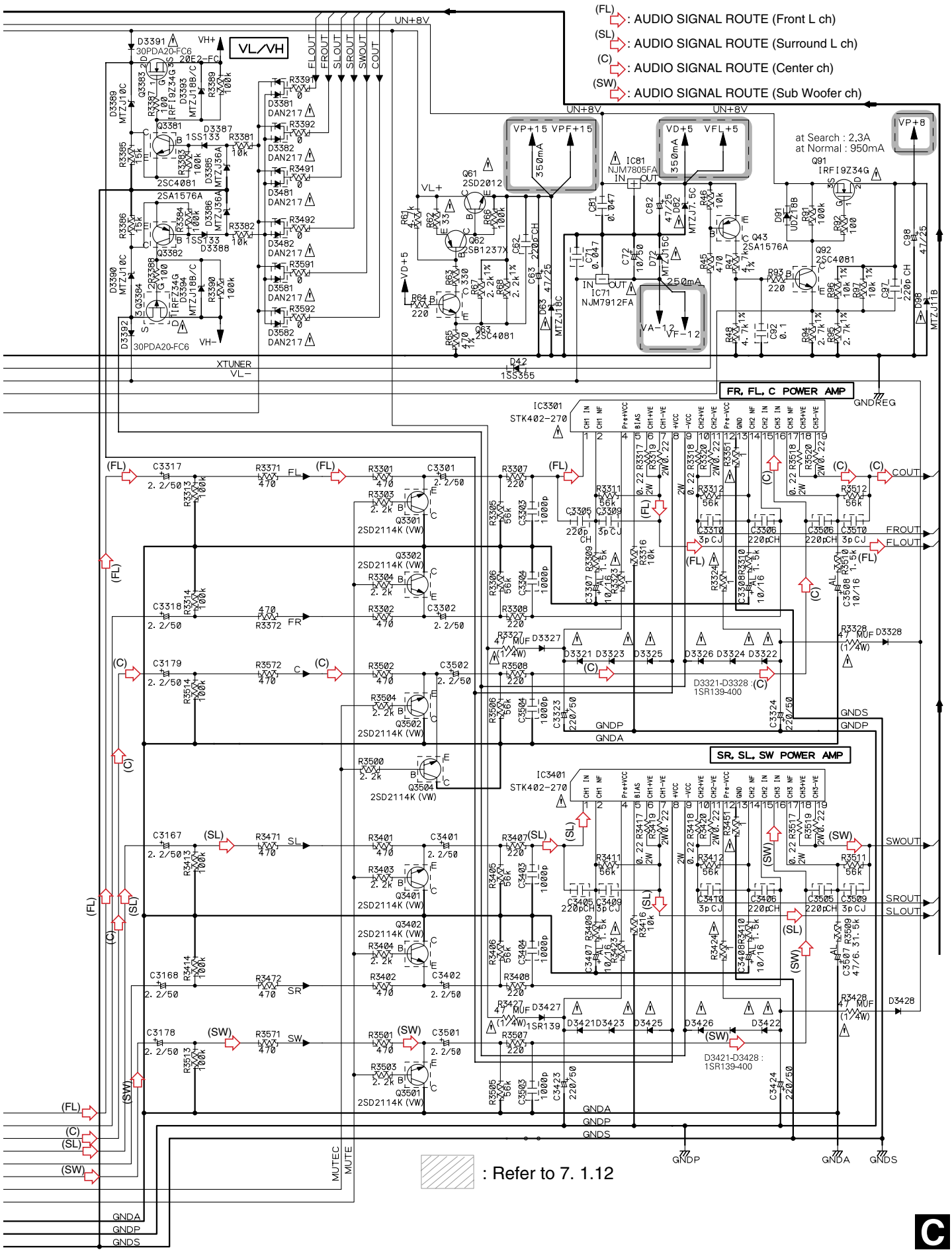


(AD) : AUDIO DATA SIGNAL ROUTE

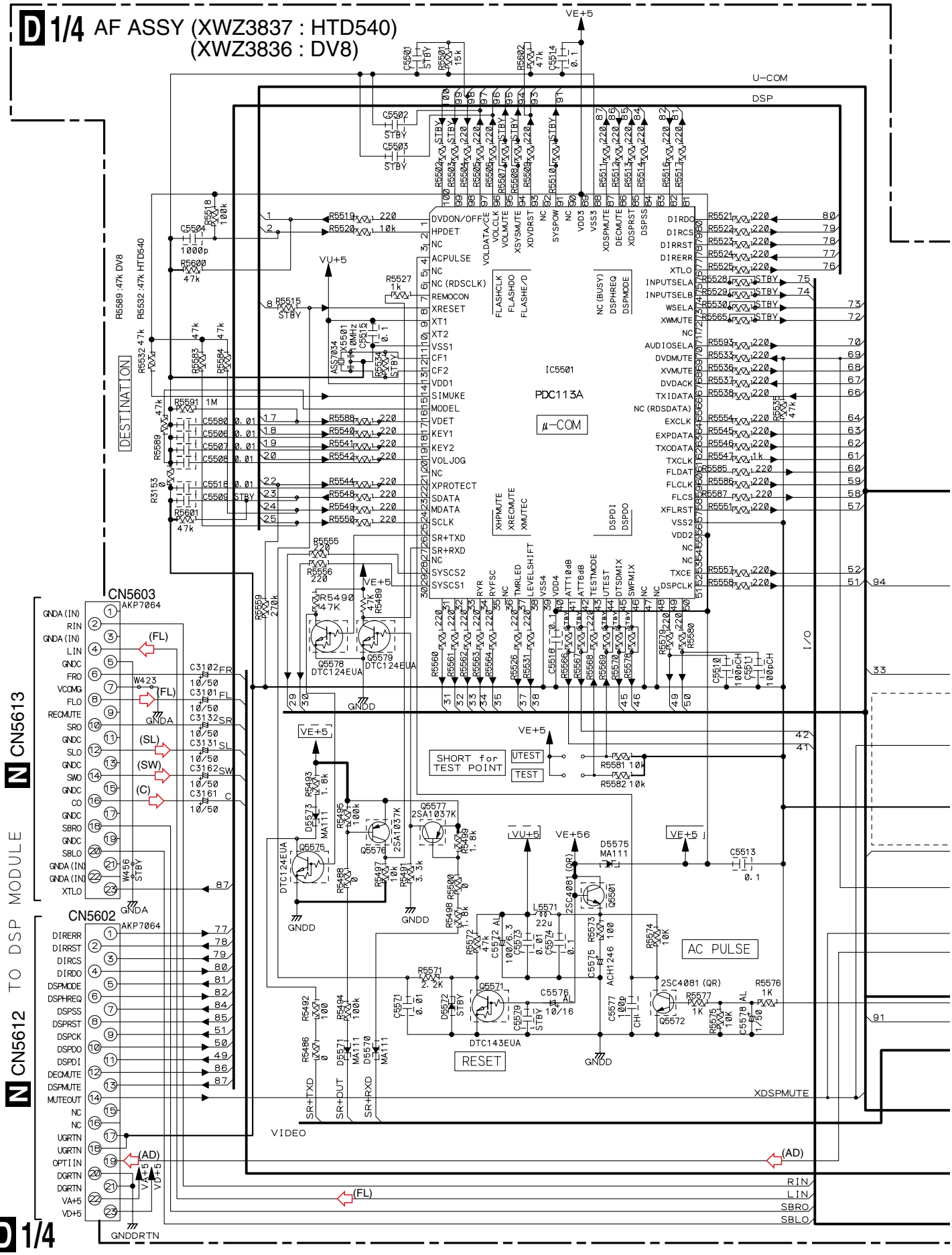


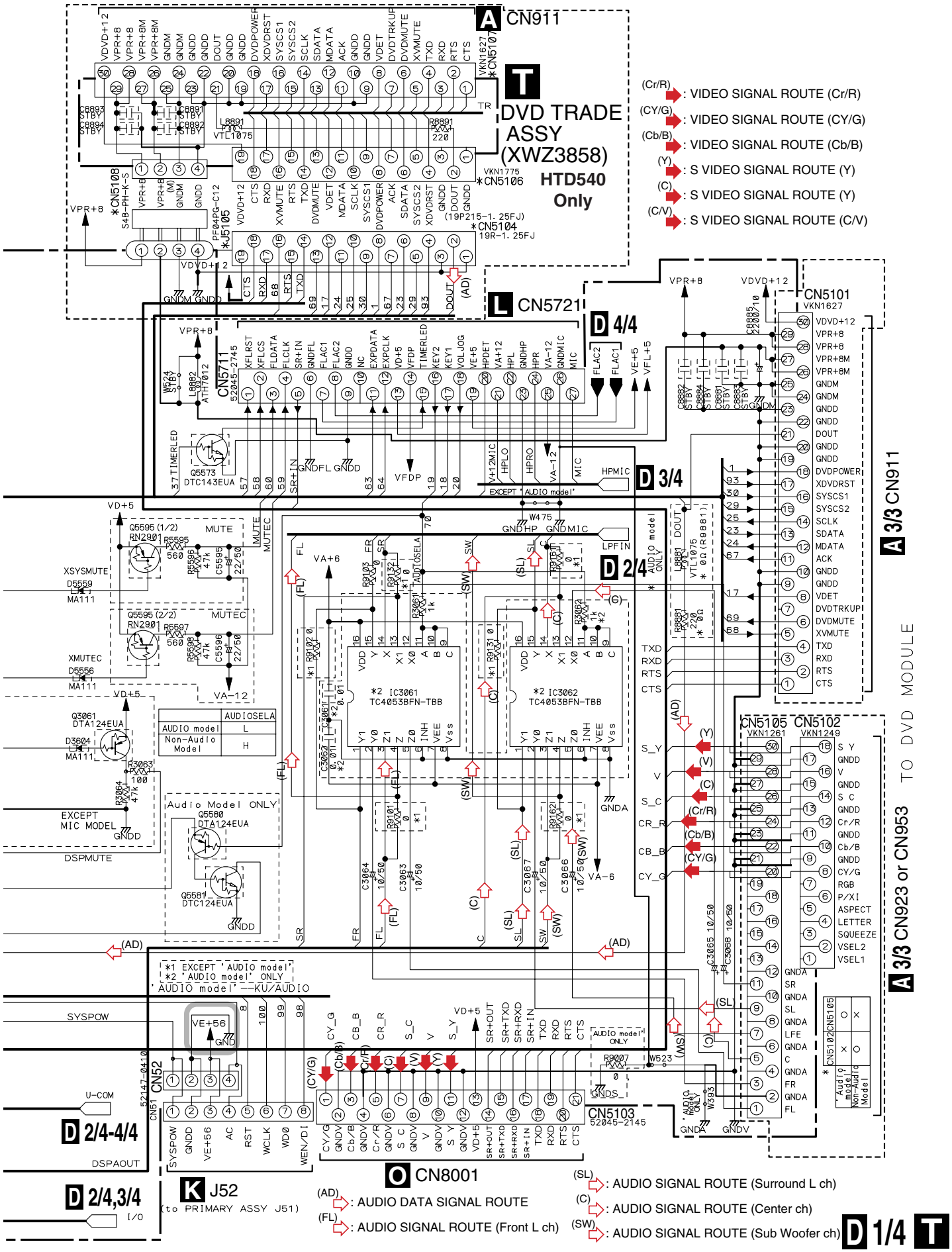
3.10 6CH AMP ASSY



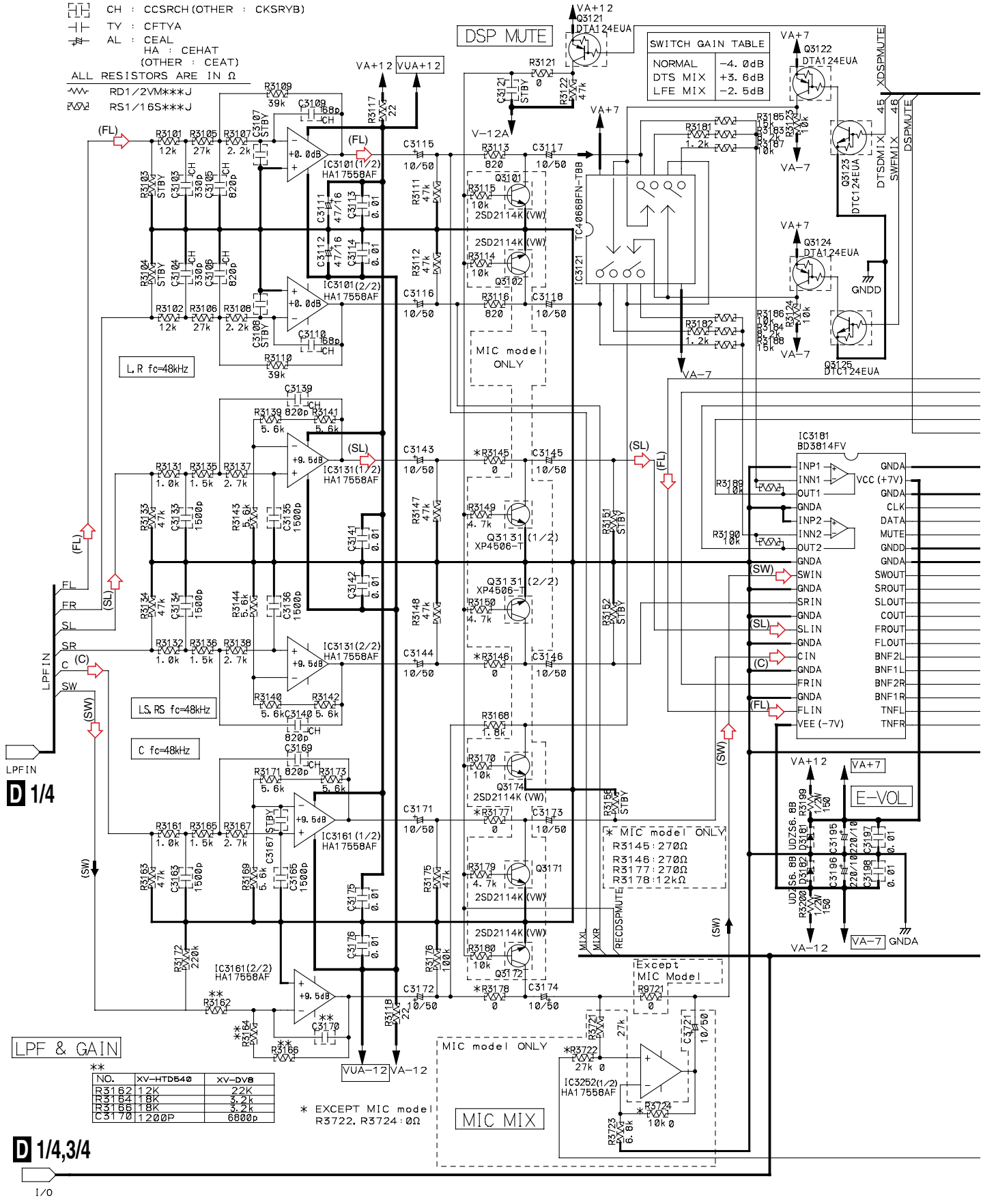

(FL): AUDIO SIGNAL ROUTE (Front L ch)
(SL): AUDIO SIGNAL ROUTE (Surround L ch)
(C): AUDIO SIGNAL ROUTE (Center ch)
(SW): AUDIO SIGNAL ROUTE (Sub Woofer ch)
VL/VH
UN+8V
VP+15 VPF+15
VD+5 VFL+5
VP+8
at Search : 2.3A
at Normal : 950mA
IC81 NJM7805FA
IC71 NJM7912FA
VA-12 VF-12
XTUNER
VL-
FR, FL, C POWER AMP
IC3301 STK402-270
SR, SL, SW POWER AMP
IC3401 STK402-270
GNDREG
GNDP
GNDA
GNDS
MUTEC
MUTE
FROUT
FLOUT
SROUT
SLOUT
SWOUT
COUT
: Refer to 7. 1.12

3.11 AF ASSY (1/4) and DVD TRADE ASSY(HTD540 Only)



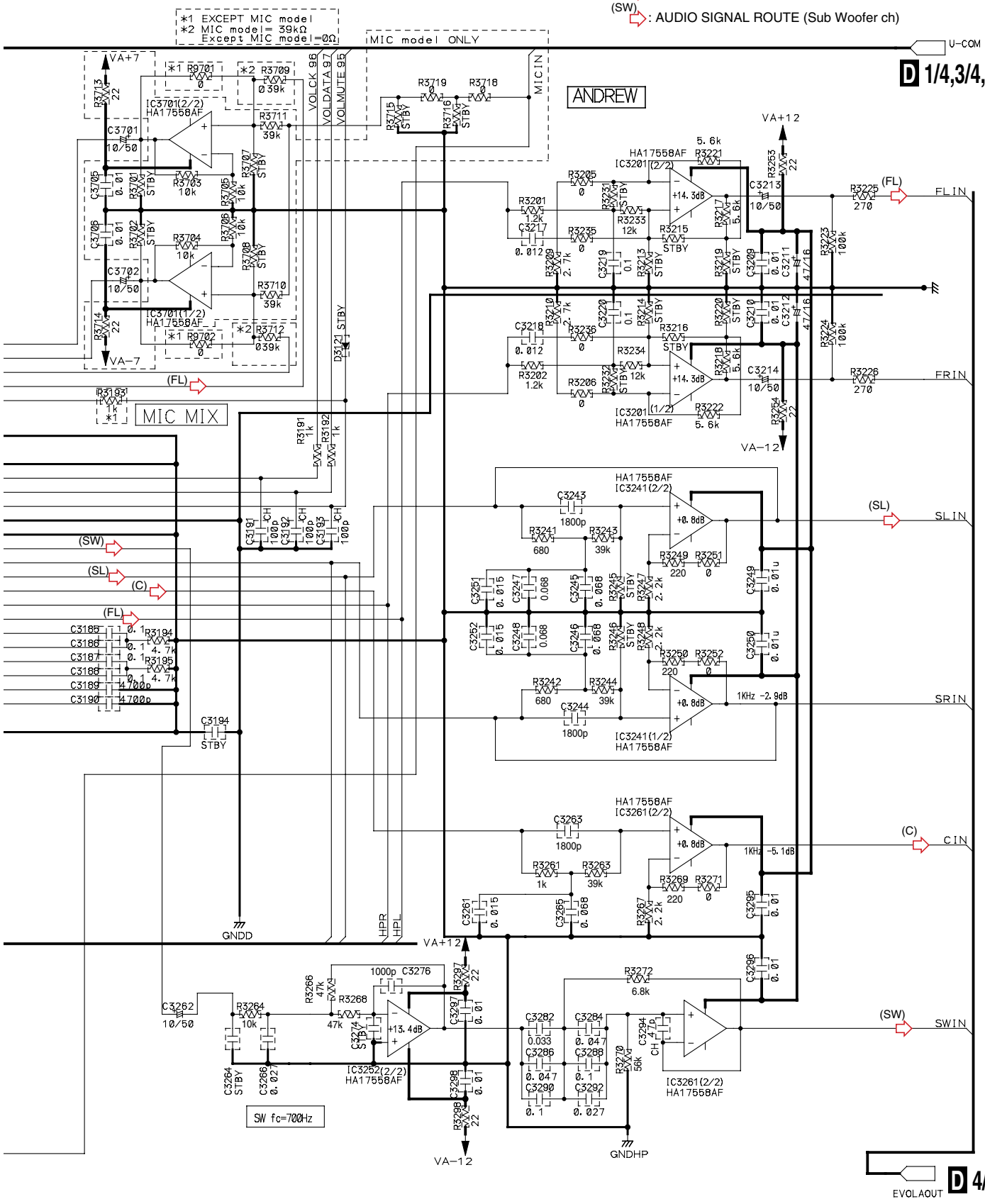

A CN911
T
DVD TRADE ASSY (XWZ3858)
HTD540 Only
*CN5107
*CN5106
*CN5104
*CN5108
*J5105
L CN5721
D 4/4
D 3/4
D 2/4
A 3/3 CN911
A 3/3 CN923 or CN953 TO DVD MODULE
CN5101
CN5105 CN5102
CN5103
CN52
K J52
(to PRIMARY ASSY J51)
O CN8001
D 2/4-4/4
D 2/4,3/4
D 1/4 T
(Cr/R): VIDEO SIGNAL ROUTE (Cr/R)
(CY/G): VIDEO SIGNAL ROUTE (CY/G)
(Cb/B): VIDEO SIGNAL ROUTE (Cb/B)
(Y): S VIDEO SIGNAL ROUTE (Y)
(C): S VIDEO SIGNAL ROUTE (Y)
(C/V): S VIDEO SIGNAL ROUTE (C/V)
(AD): AUDIO DATA SIGNAL ROUTE
(FL): AUDIO SIGNAL ROUTE (Front L ch)
(SL): AUDIO SIGNAL ROUTE (Surround L ch)
(C): AUDIO SIGNAL ROUTE (Center ch)
(SW): AUDIO SIGNAL ROUTE (Sub Woofer ch)
IC3061 TC4053BFN-TBB
IC3062 TC4053BFN-TBB
AUDIOSELA
AUDIO model L
Non-Audio Model H
EXCEPT 'AUDIO model'
Audio Model ONLY
*1 EXCEPT 'AUDIO model'
*2 'AUDIO model' ONLY
'AUDIO model' --KU/AUDIO

3.12 AF ASSY (2/4)

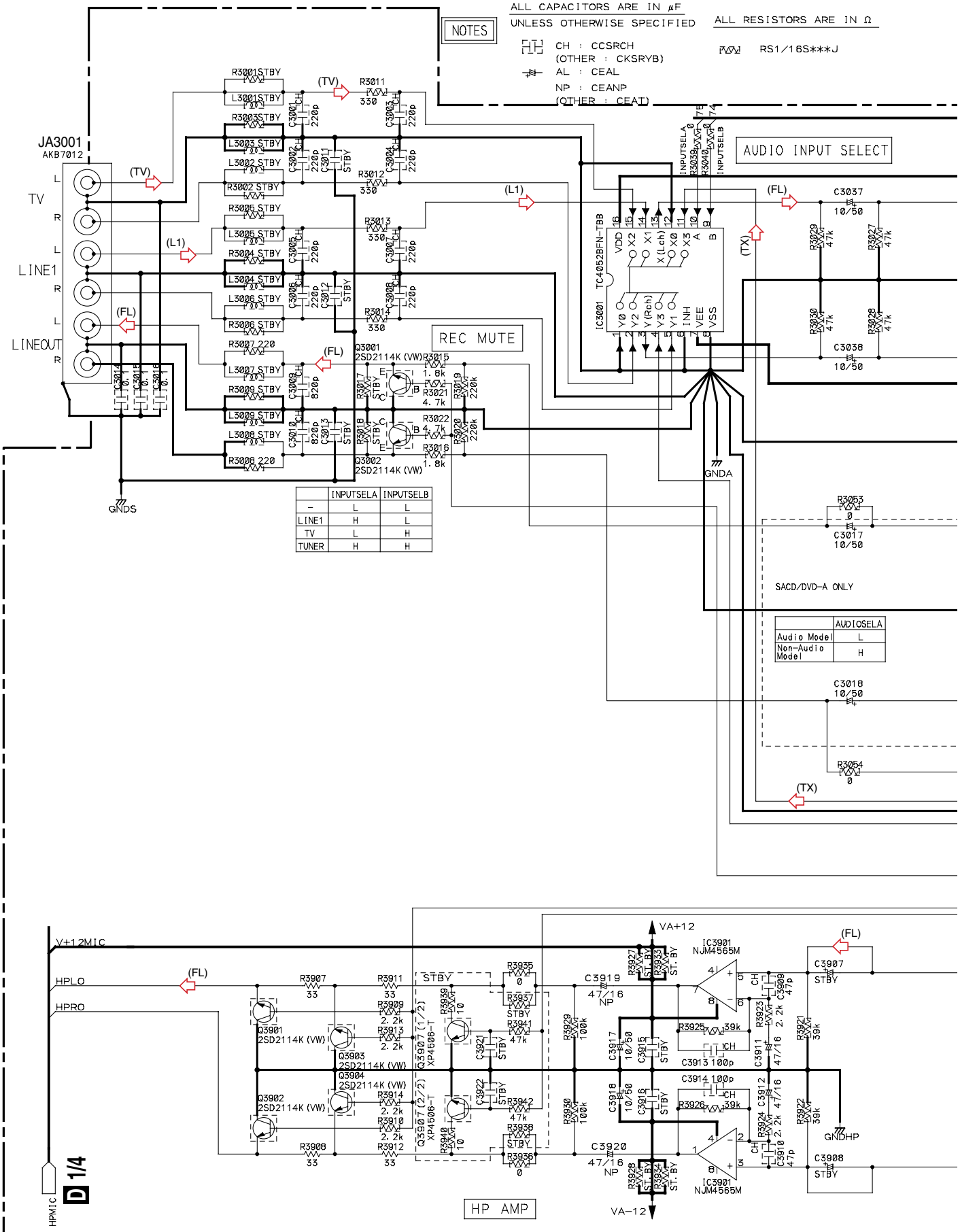


D 2/4 AF ASSY (XWZ3837 : HTD540) (XWZ3836 : DV8)

(FL) : AUDIO SIGNAL ROUTE (Front L ch)
(SL) : AUDIO SIGNAL ROUTE (Surround L ch)
(C) : AUDIO SIGNAL ROUTE (Center ch)
(SW) : AUDIO SIGNAL ROUTE (Sub Woofer ch)



3.13 AF(3/4) ASSY

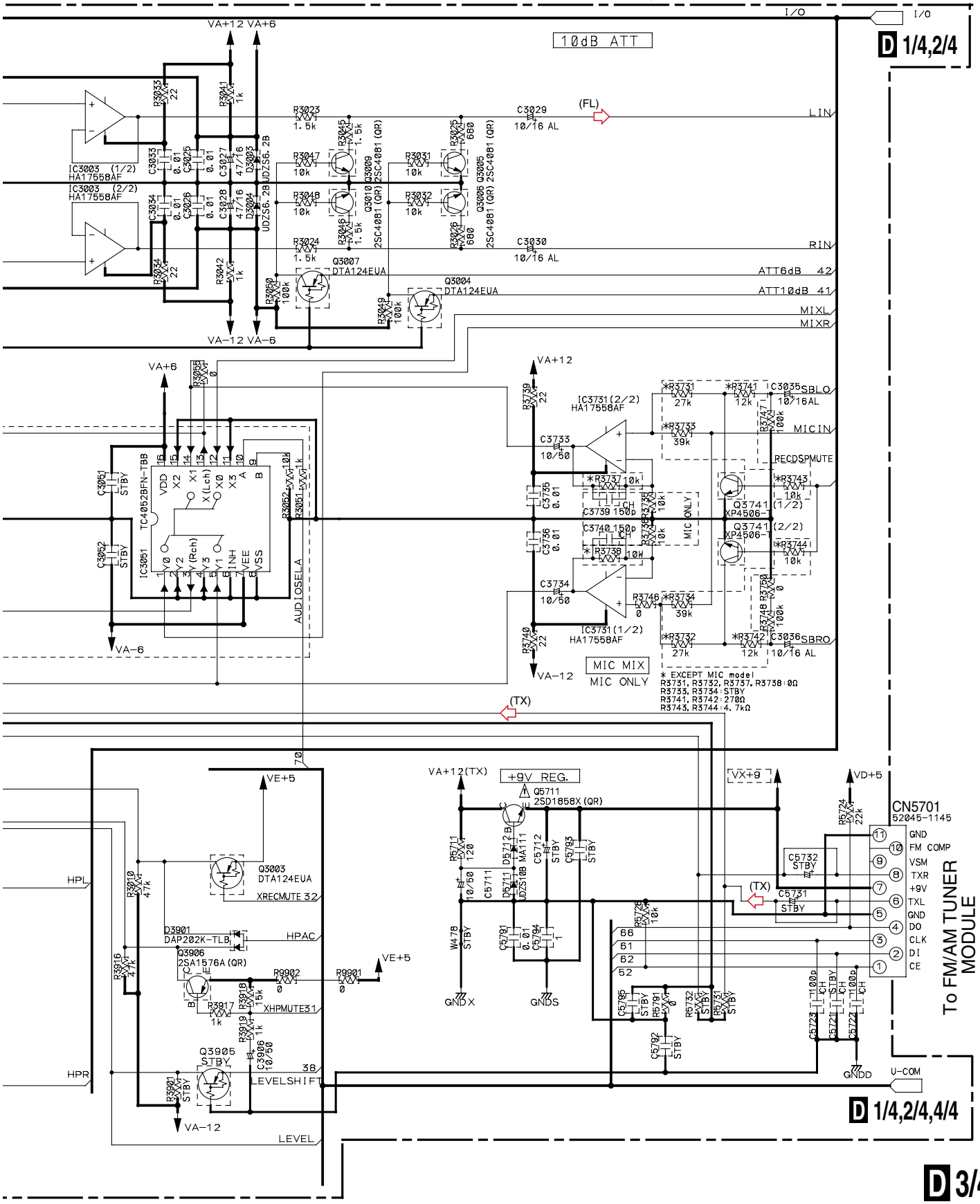


	INPUTSELA	INPUTSELB
–	L	L
LINE1	H	L
TV	L	H
TUNER	H	H

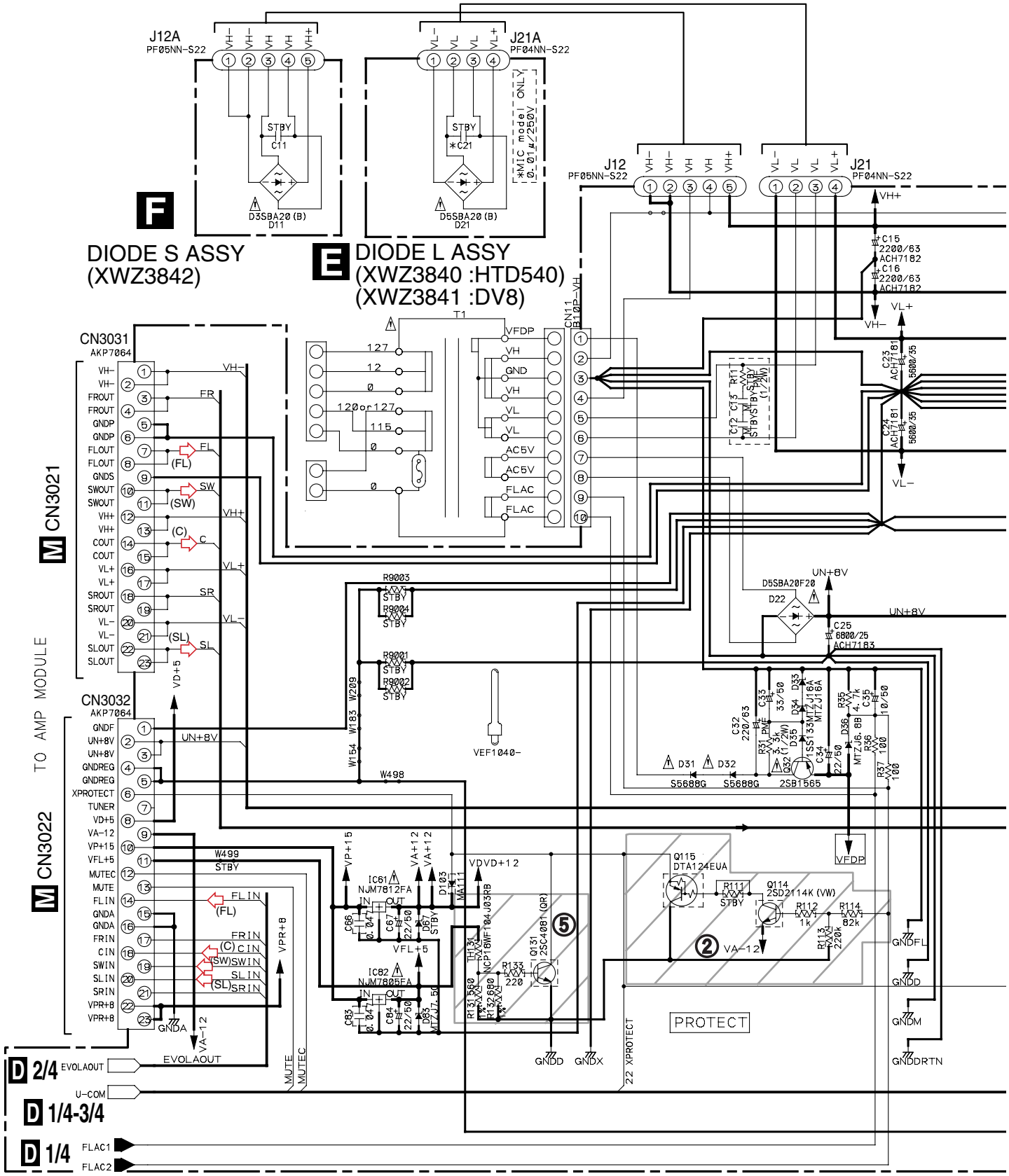
	AUDIOSELA
Audio Model	L
Non-Audio Model	H

D 3/4 AF ASSY (XWZ3837 : HTD540)
(XWZ3836 : DV8)

(FL) : AUDIO SIGNAL ROUTE (Front L ch)
(TV) : AUDIO SIGNAL ROUTE (TV L ch)
(L1) : AUDIO SIGNAL ROUTE (LINE 1 L ch)
(TX) : AUDIO SIGNAL ROUTE (Tuner L ch)

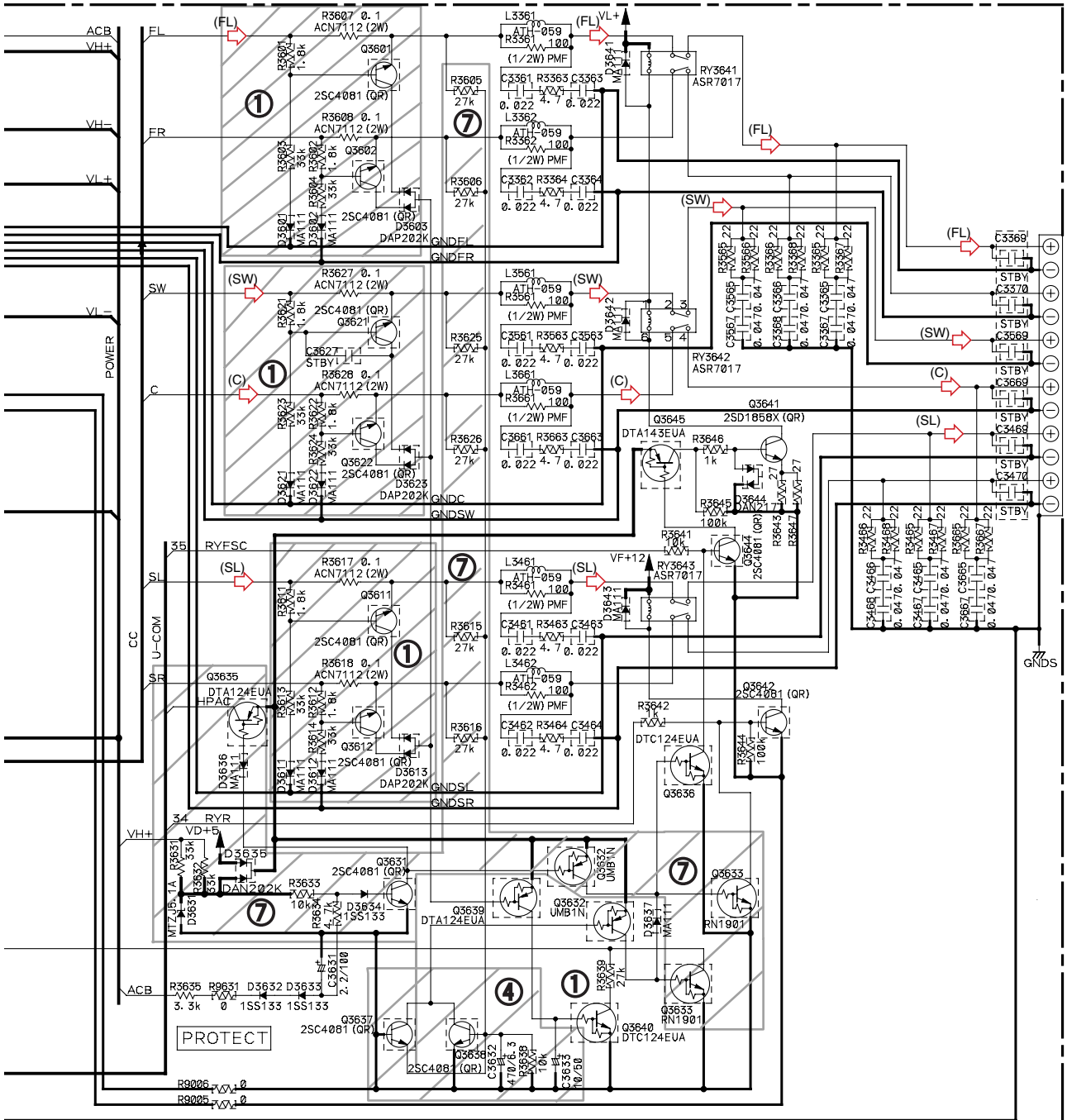


3.14 AF(4/4), DIODE L and DIODE S ASSYS



D 4/4 AF ASSY (XWZ3837 : HTD540) (XWZ3836 : DV8)

(FL): AUDIO SIGNAL ROUTE (Front L ch)
(SL): AUDIO SIGNAL ROUTE (Surround L ch)
(C): AUDIO SIGNAL ROUTE (Center ch)
(SW): AUDIO SIGNAL ROUTE (Sub Woofer ch)



: Refer to "7. 1.12 PROTECTION CIRCUIT"

NOTES

ALL CAPACITORS ARE IN μF
UNLESS OTHERWISE SPECIFIED

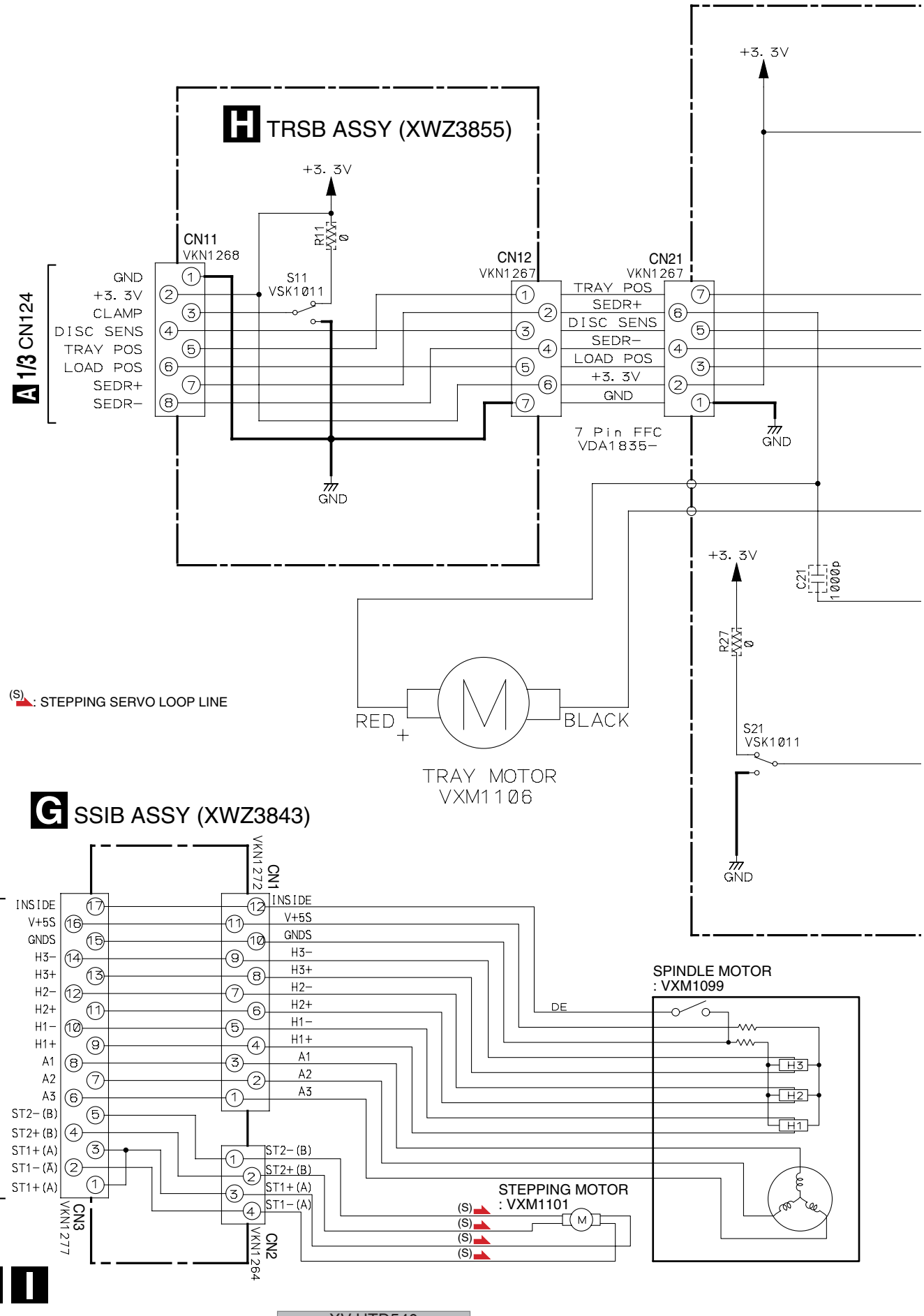
CH : CCSRCH
(OTHER : CKSRYB)
CQMA
CEAT

ALL RESISTORS ARE IN Ω

	RS1/16S***J
(1/10W)	RS1/10S***J
	RD1/4PU***J
(1W)	RS1LMF***J
PMF (1/2W)	RD1/2PMF***J
FU (1/4W)	RF1/4PS***J
1%	RF1/16S****F

D 4/4

3.15 TRSB, SSRB, LOMB and SSIB ASSYS



G H I

NOTES

ALL RESISTORS ARE IN Ω

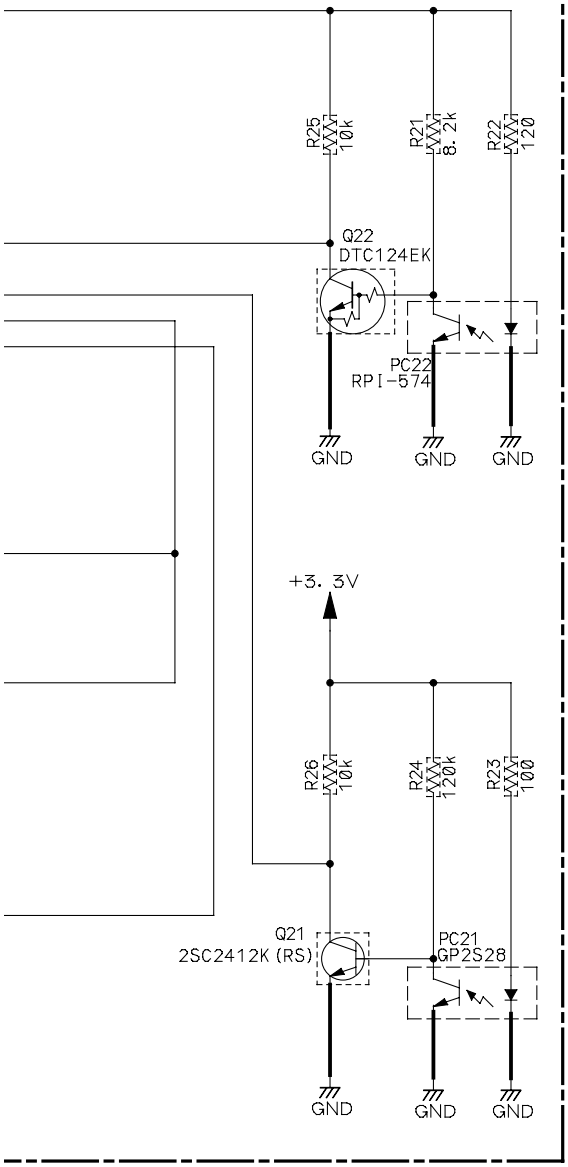
RS1/10S***J

ALL CAPACITORS ARE IN μF

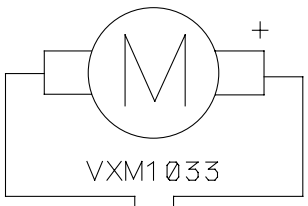
UNLESS OTHERWISE SPECIFIED

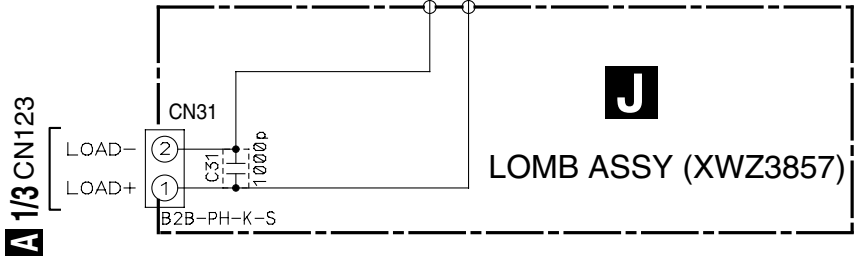
CKSQYB***K**

I SSRB ASSY (XWZ3856)

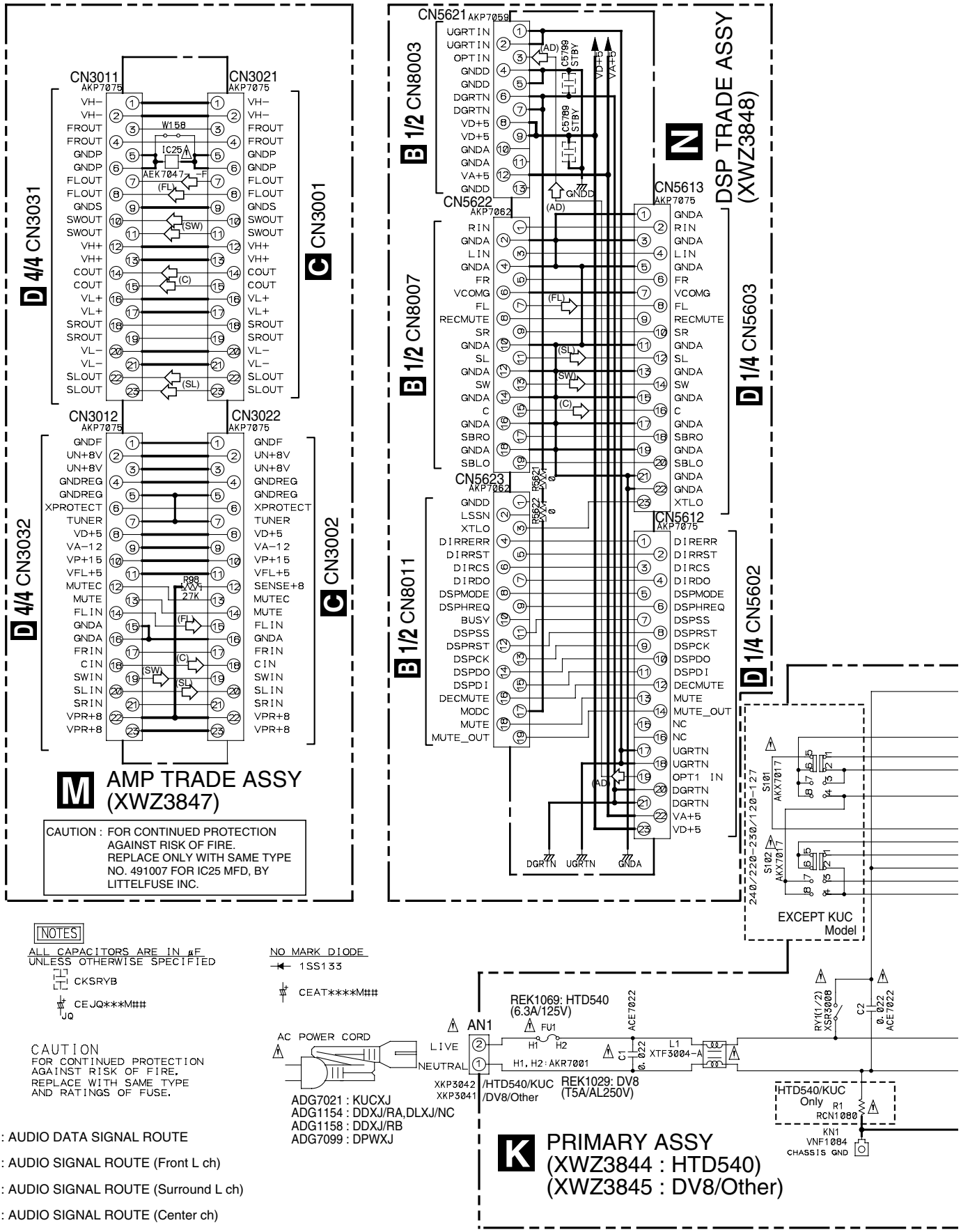


LOADING MOTOR

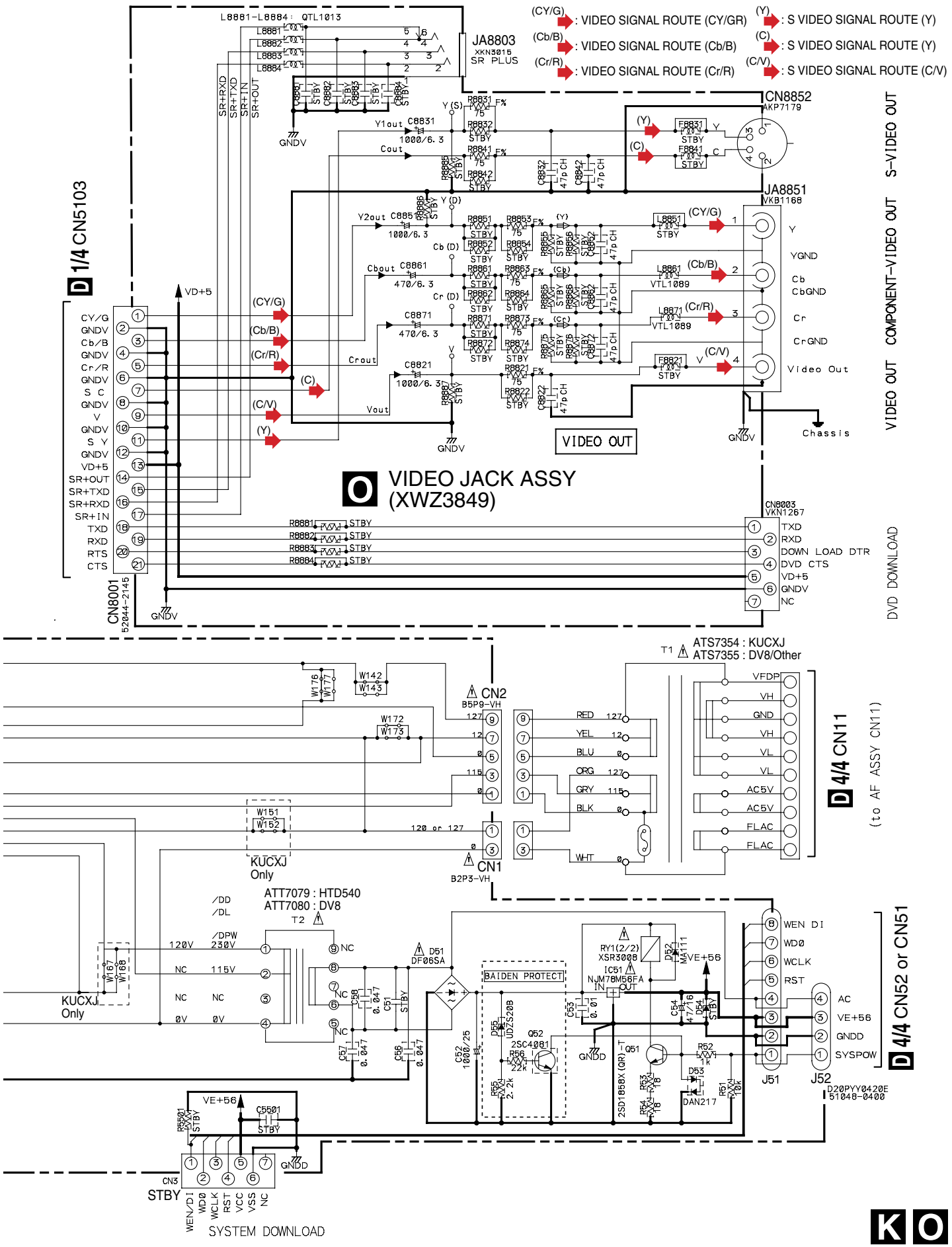




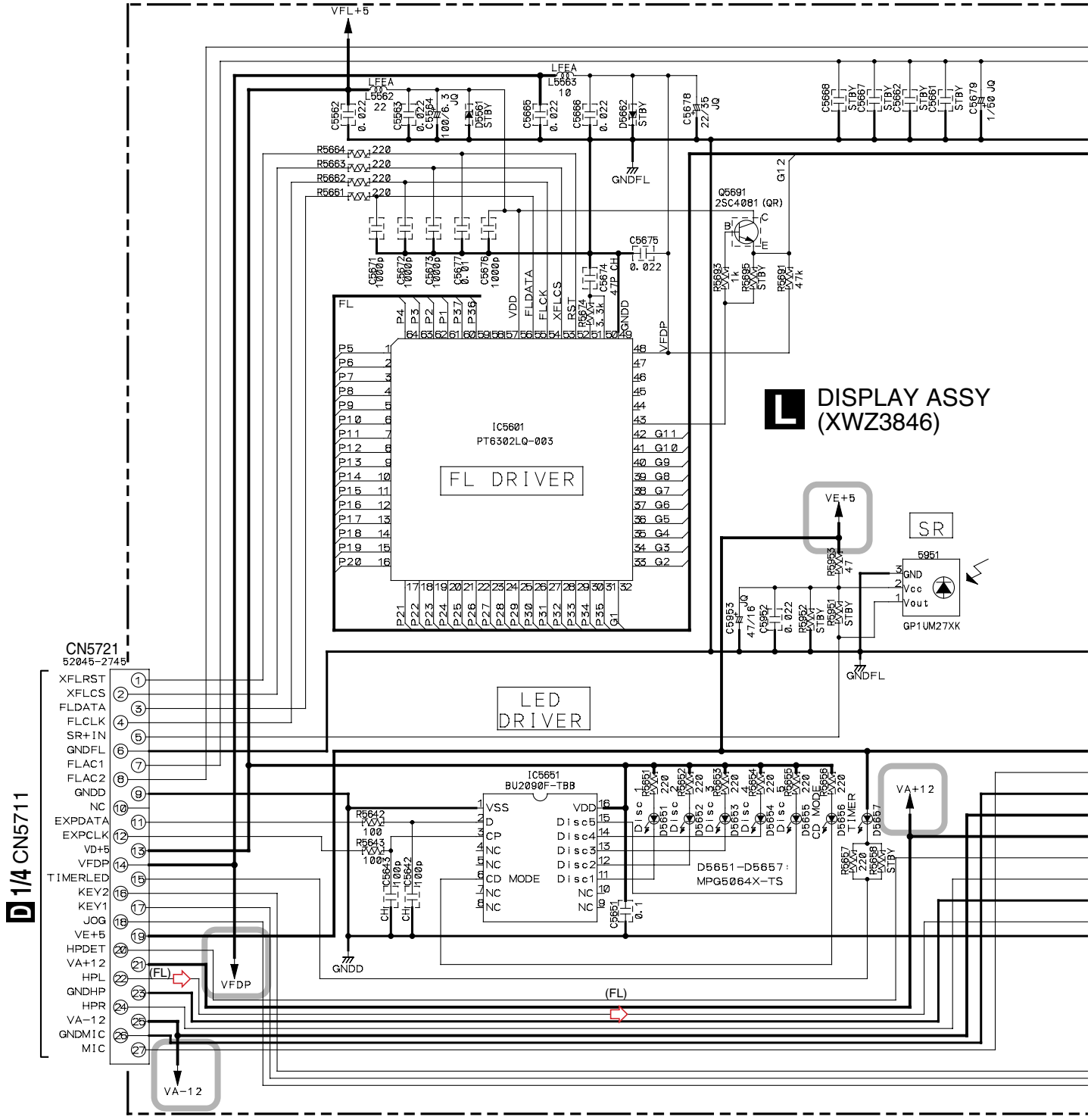
3.16 PRIMARY, AMP TRADE, DSP TRADE and VIDEO JACK ASSYS

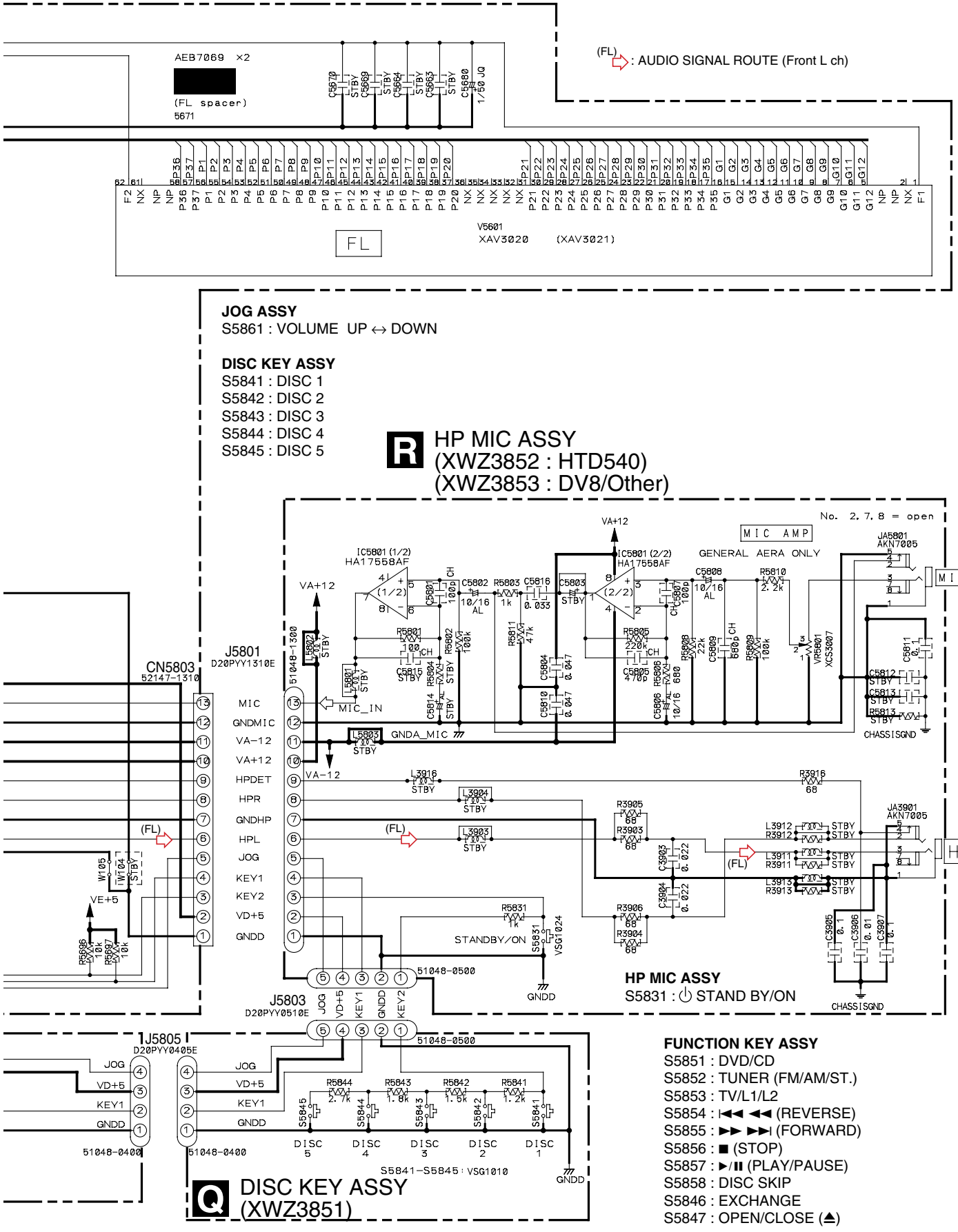


K M N


(CY/G) : VIDEO SIGNAL ROUTE (CY/GR)
(Cb/B) : VIDEO SIGNAL ROUTE (Cb/B)
(Cr/R) : VIDEO SIGNAL ROUTE (Cr/R)
(Y) : S VIDEO SIGNAL ROUTE (Y)
(C) : S VIDEO SIGNAL ROUTE (Y)
(C/V) : S VIDEO SIGNAL ROUTE (C/V)
JA8803
XKN3015
SR PLUS
CN8852
AKP7179
JA8851
VKB1168
D 1/4 CN5103
VIDEO OUT
O VIDEO JACK ASSY
(XWZ3849)
CN8001
52044-2145
CN8003
VKN1267
DVD DOWNLOAD
S-VIDEO OUT
COMPONENT-VIDEO OUT
VIDEO OUT
Chassis
D 4/4 CN11
(to AF ASSY CN11)
CN2
B5P9-VH
CN1
B2P3-VH
T1 ATS7354 : KUCXJ
ATS7355 : DV8/Other
KUCXJ Only
ATT7079 : HTD540
ATT7080 : DV8
T2
BAIDEN PROTECT
IC51
NJM78M56FA
RY1(2/2)
XSR3008
D 4/4 CN52 or CN51
J51
J52
D20PYY0420E
51048-0400
CN3
STBY
SYSTEM DOWNLOAD
VE+56
GNDD
GNDV
VD+5

3.17 DISPLAY, FUNCTION KEY, DISC KEY, HP MIC and JOG ASSYS




AEB7069 ×2
(FL spacer)
5671
(FL) : AUDIO SIGNAL ROUTE (Front L ch)
FL
V5601
XAV3020 (XAV3021)
JOG ASSY
S5861 : VOLUME UP ↔ DOWN
DISC KEY ASSY
S5841 : DISC 1
S5842 : DISC 2
S5843 : DISC 3
S5844 : DISC 4
S5845 : DISC 5
R HP MIC ASSY
(XWZ3852 : HTD540)
(XWZ3853 : DV8/Other)
No. 2, 7, 8 = open
MIC AMP
GENERAL AERA ONLY
IC5801 (1/2) HA17558AF
IC5801 (2/2) HA17558AF
VA+12
VA-12
MIC_IN
GNDA_MIC
CHASSISGND
CN5803
52147-1310
J5801
D20PYY1310E
51048-1300
MIC
GNDMIC
VA-12
VA+12
HPDET
HPR
GNDHP
HPL
JOG
KEY1
KEY2
VD+5
GNDD
(FL)
VE+5
STANDBY/ON
S5831
VSG1024
J5803
D20PYY0510E
51048-0500
HP MIC ASSY
S5831 : ⏻ STAND BY/ON
J5805
D20PYY0405E
51048-0400
R5844 2.7k
R5843 1.8k
R5842 1.5k
R5841 1.2k
DISC 5
DISC 4
DISC 3
DISC 2
DISC 1
S5841–S5845 : VSG1010
Q DISC KEY ASSY
(XWZ3851)
FUNCTION KEY ASSY
S5851 : DVD/CD
S5852 : TUNER (FM/AM/ST.)
S5853 : TV/L1/L2
S5854 : I◀◀ ◀◀ (REVERSE)
S5855 : ▶▶ ▶▶I (FORWARD)
S5856 : ■ (STOP)
S5857 : ▶/❚❚ (PLAY/PAUSE)
S5858 : DISC SKIP
S5846 : EXCHANGE
S5847 : OPEN/CLOSE (⏏)

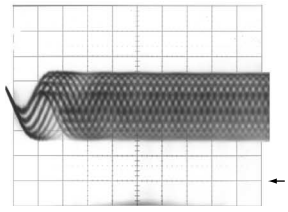
3.18 DVDM WAVEFORMS

A DVDM ASSY

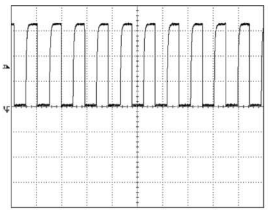
Note : The encircled numbers denote measuring point in the schematic diagram.

Measurement condition : No. 1 to 2 and 8 to 13 : reference A1 (DVD), T2-chp 19, Color -bar

1 **IC301-pin 4 (RFOUT)**
V: 200mV/div. H: 0.1µsec/div.

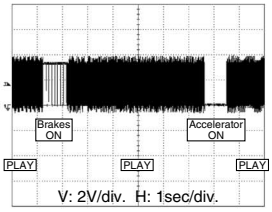


2 **IC301-pin 36 (FG)**
V: 1V/div. H: 5msec/div.



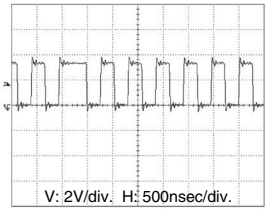
3 **IC301-pin 44 (SPDL_PDM)**

[PLAY → STOP → PLAY]



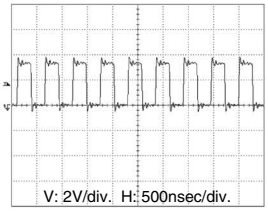
V: 2V/div. H: 1sec/div.

[PLAY]



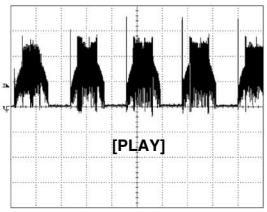
V: 2V/div. H: 500nsec/div.

[STOP]



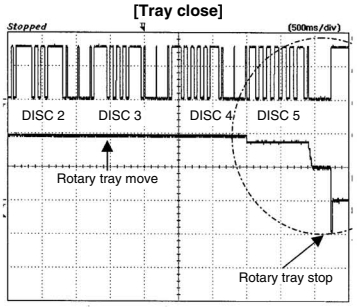
V: 2V/div. H: 500nsec/div.

4 **CN122-pin 8, 7, 6 (FTS Driver -A1, A2, A3)**
V: 2V/div. H: 2msec/div.



6 **CN124-pin 5 (TRAY POS)**
CN124-pin 7, 8
(Rotating Tray Motor drive voltage)

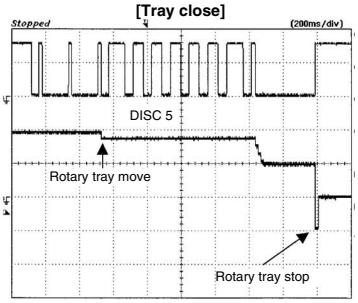
[Tray close]



V: 2V/div. H: 500msec/div.

Elements on larger

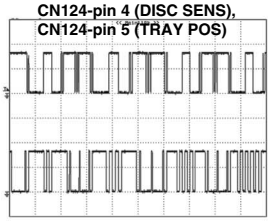
[Tray close]



V: 2V/div. H: 200msec/div.

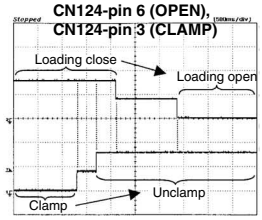
7 **CN124-pin 4, 5, 6, 3**
IC601-pin 114

[Tray move]
CN124-pin 4 (DISC SENS),
CN124-pin 5 (TRAY POS)



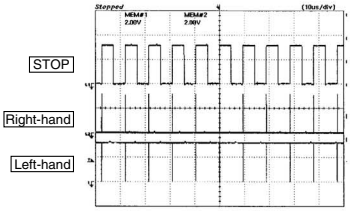
V: 2V/div. H: 1sec/div.

[Tray open]
CN124-pin 6 (OPEN),
CN124-pin 3 (CLAMP)



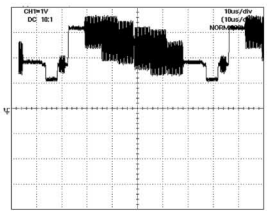
V: 2V/div. H: 500msec/div.

IC601-pin 114 (ROT_DRV)



V: 2V/div. H: 10µsec/div.

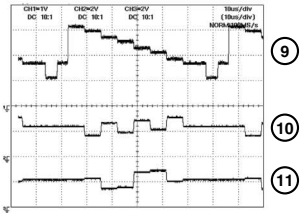
8 **CN923-pin 16 (Composite Video out)**
V: 1V/div. H: 10µsec/div.



9 **CN923-pin 8 (Component Video out-Y)**
V: 1V/div. H: 10µsec/div.

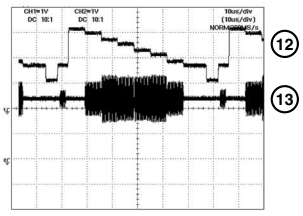
10 **CN923-pin 10 (Component Video out-Pb)**
V: 2V/div. H: 10µsec/div.

11 **CN923-pin 12 (Component Video out-Pr)**
V: 2V/div. H: 10µsec/div.



12 **CN923-pin 18 (S Video out-Y)**
V: 1V/div. H: 10µsec/div.

13 **CN923-pin 14 (S Video out-C)**
V: 1V/div. H: 10µsec/div.



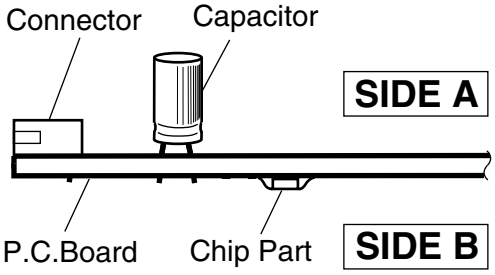
4. PCB CONNECTION DIAGRAM

NOTE FOR PCB DIAGRAMS :

1. Part numbers in PCB diagrams match those in the schematic diagrams.
2. A comparison between the main parts of PCB and schematic diagrams is shown below.

Symbol In PCB Diagrams	Symbol In Schematic Diagrams	Part Name
B C E	B C E B C E	Transistor
B C E	B C E B C E	Transistor with resistor
D G S	D G S D G S	Field effect transistor
		Resistor array
		3-terminal regulator

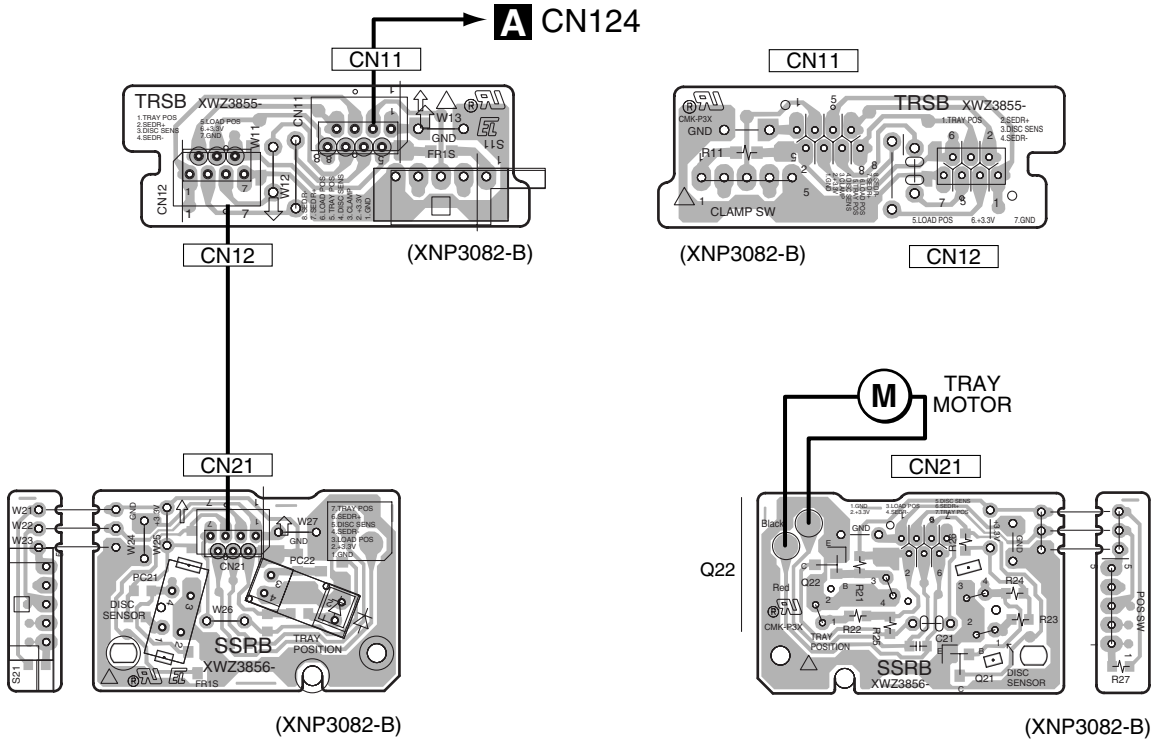
3. The parts mounted on this PCB include all necessary parts for several destinations.
   For further information for respective destinations, be sure to check with the schematic diagram.
4. View point of PCB diagrams.



4.1 TRSB, SSRB and LOMB ASSYS

SIDE A **SIDE B**

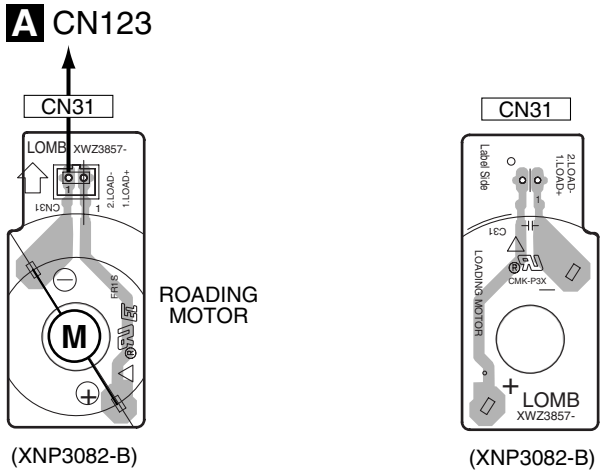
H TRSB ASSY



I SSRB ASSY

J LOMB ASSY

SIDE A **SIDE B**

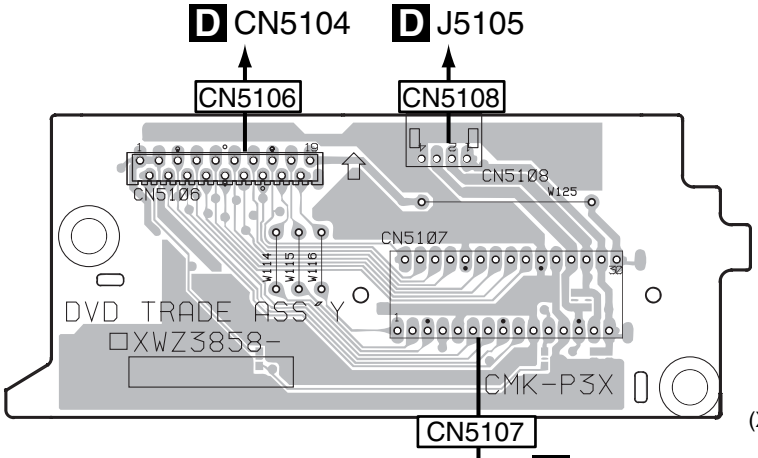


H I J

4.2 SSIB and DVD TRADE ASSYS

SIDE A

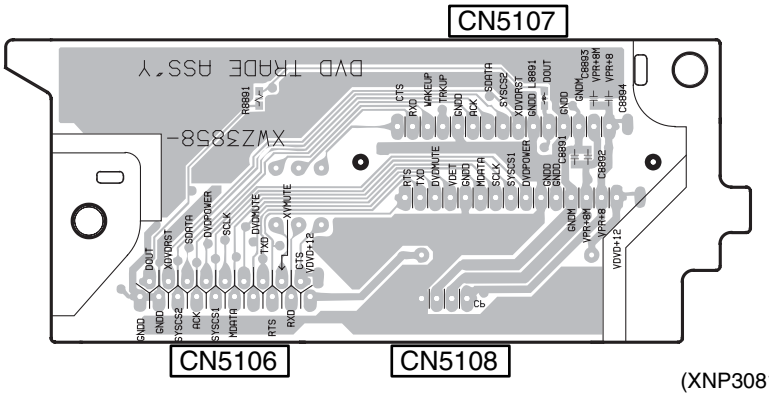
T DVD TRADE ASSY (HTD540 : Only)



(XNP3081-B)

T DVD TRADE ASSY

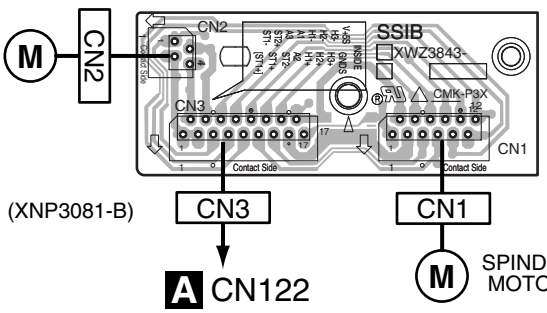
SIDE B



(XNP3081-B)

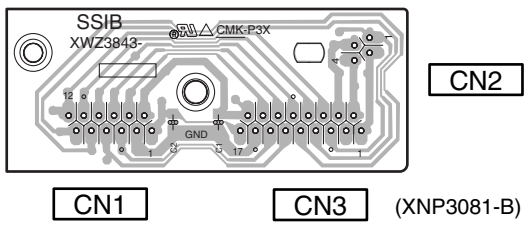
SIDE A

G SSIB ASSY



SIDE B

G SSIB ASSY



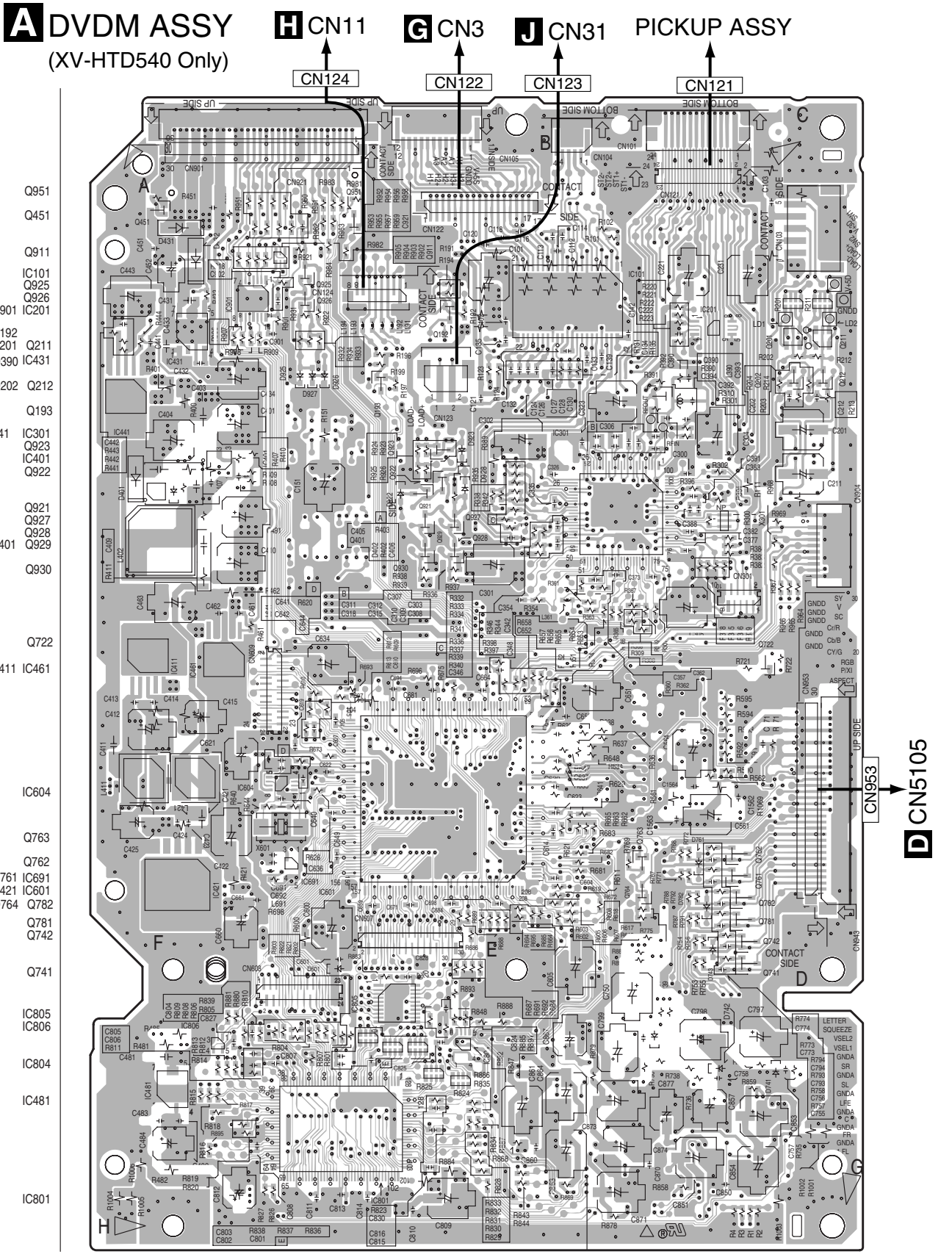
G T

G T

4.3 DVDM ASSY (HTD540 Only)

SIDE A **SIDE A**

A DVDM ASSY
(XV-HTD540 Only)



(VNP7480-A)

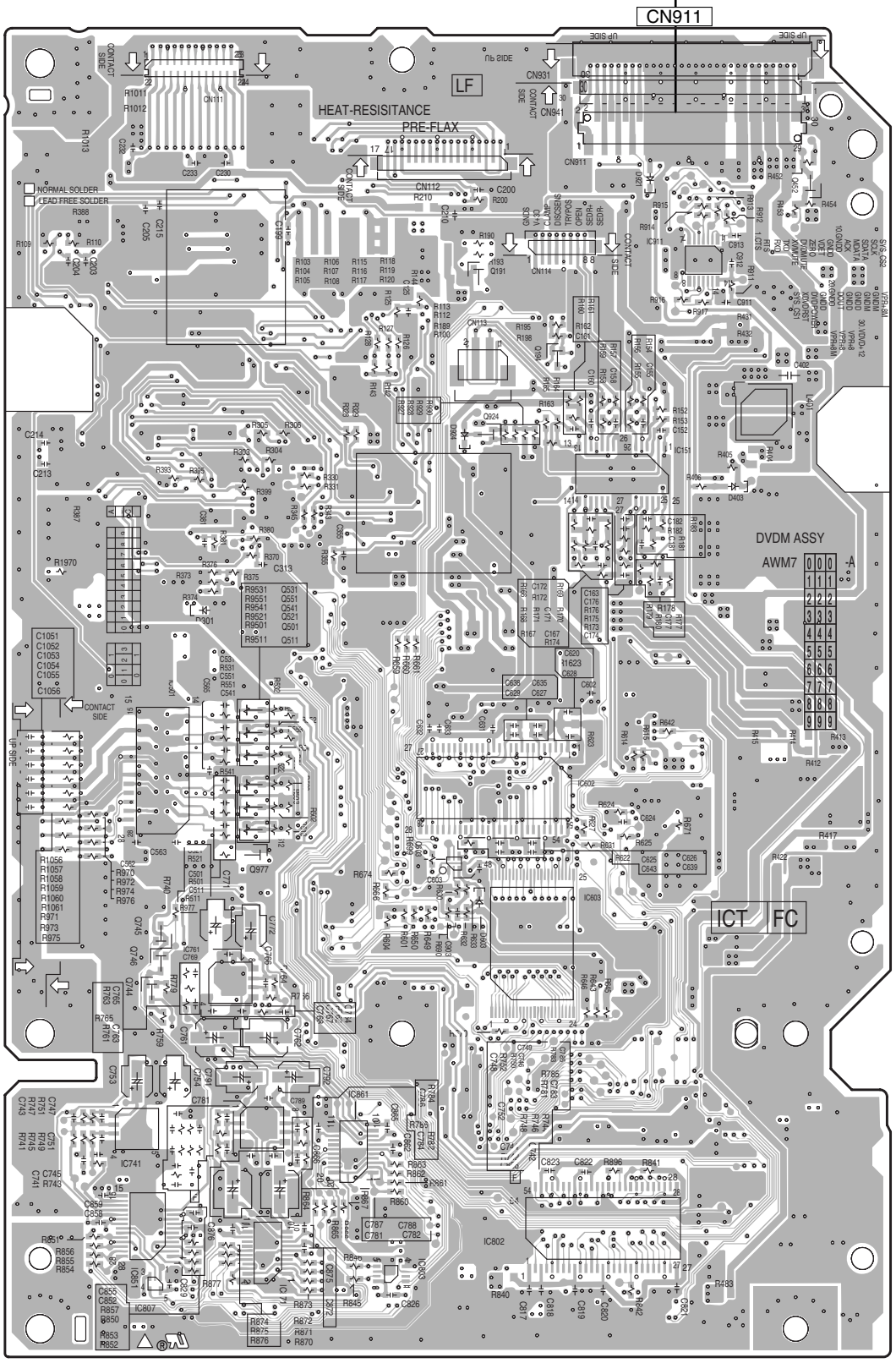
A **A**

SIDE B

SIDE B

A DVDM ASSY

T CN5107



(ANP7480-A)

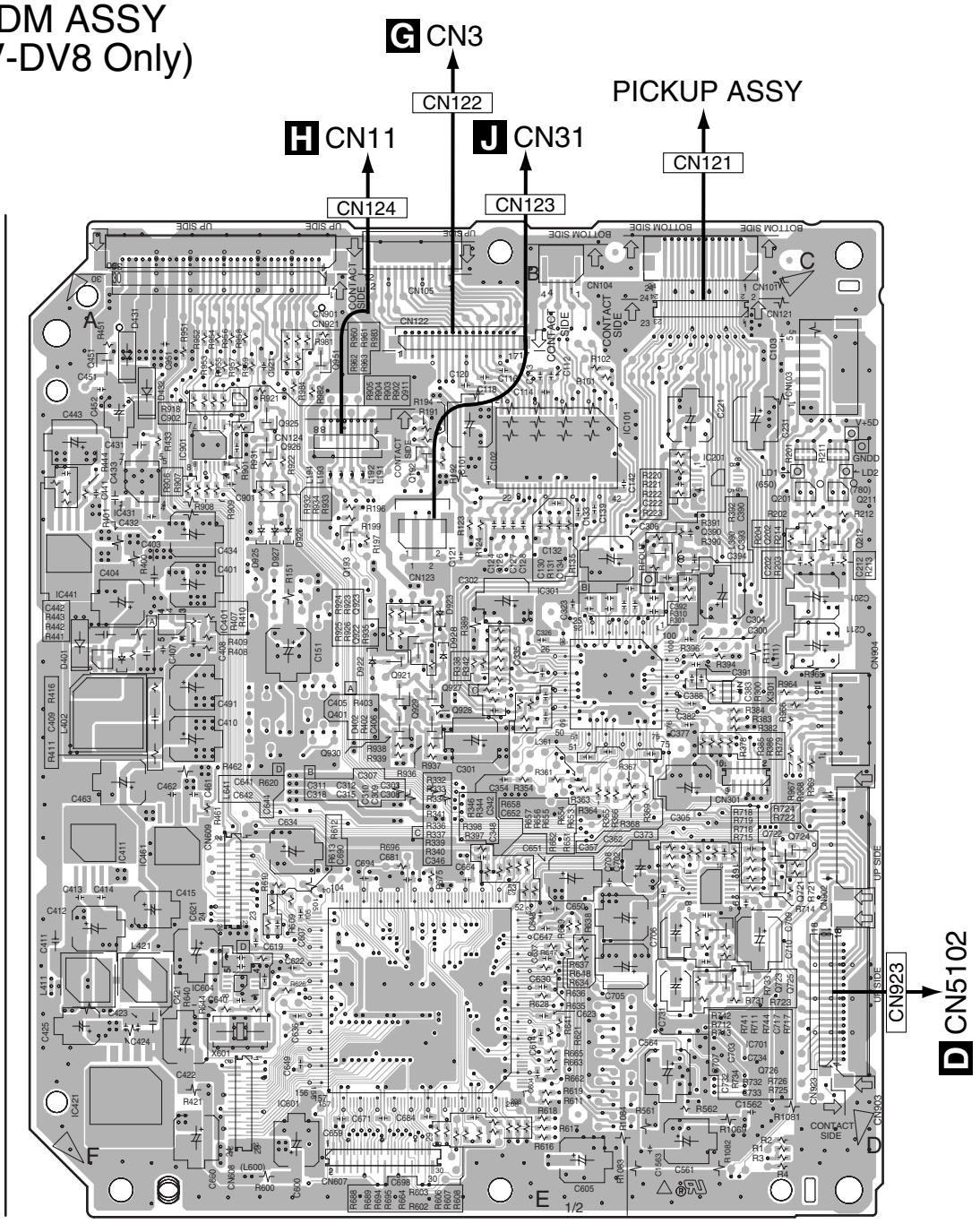
A

A

4.4 DVDM ASSY (DV8 / Other)

SIDE A **SIDE A**

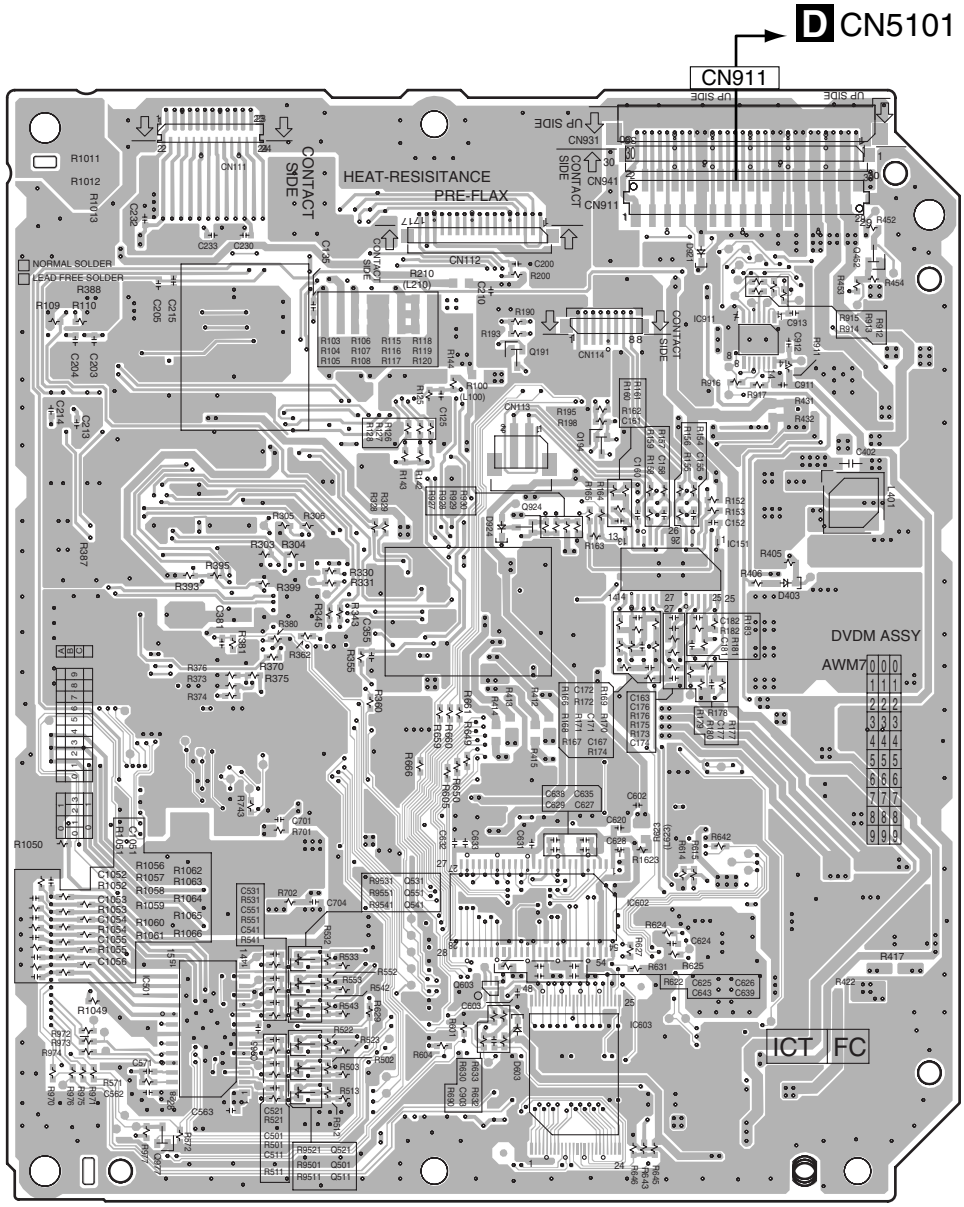
A DVDM ASSY
(XV-DV8 Only)



			IC421
			IC601
Q726			
			IC701
Q451	Q951		IC604
Q725	Q723		
Q911			
Q925			IC101
Q926		IC901	IC201
Q721			
Q192			
Q201	Q211		IC461
		IC431	IC411
Q390	Q724	Q722	
Q202	Q212		
Q193			
		IC441	IC301
Q923	Q930		IC401
Q922			
Q928	Q929	Q401	
Q921			
Q927	Q927		
Q921			
Q401	Q929	Q928	
Q922			
			IC401
Q930	Q923		
		IC301	IC441
Q193			
Q212	Q202		
Q722	Q724	Q390	
		IC411	IC431
			IC461
Q211	Q201		
Q192			
Q721		IC201	IC901
Q926			
			IC101
Q925			
Q911			
Q723	Q725		IC604
Q951	Q451		
			IC701
Q726			
			IC601
			IC421

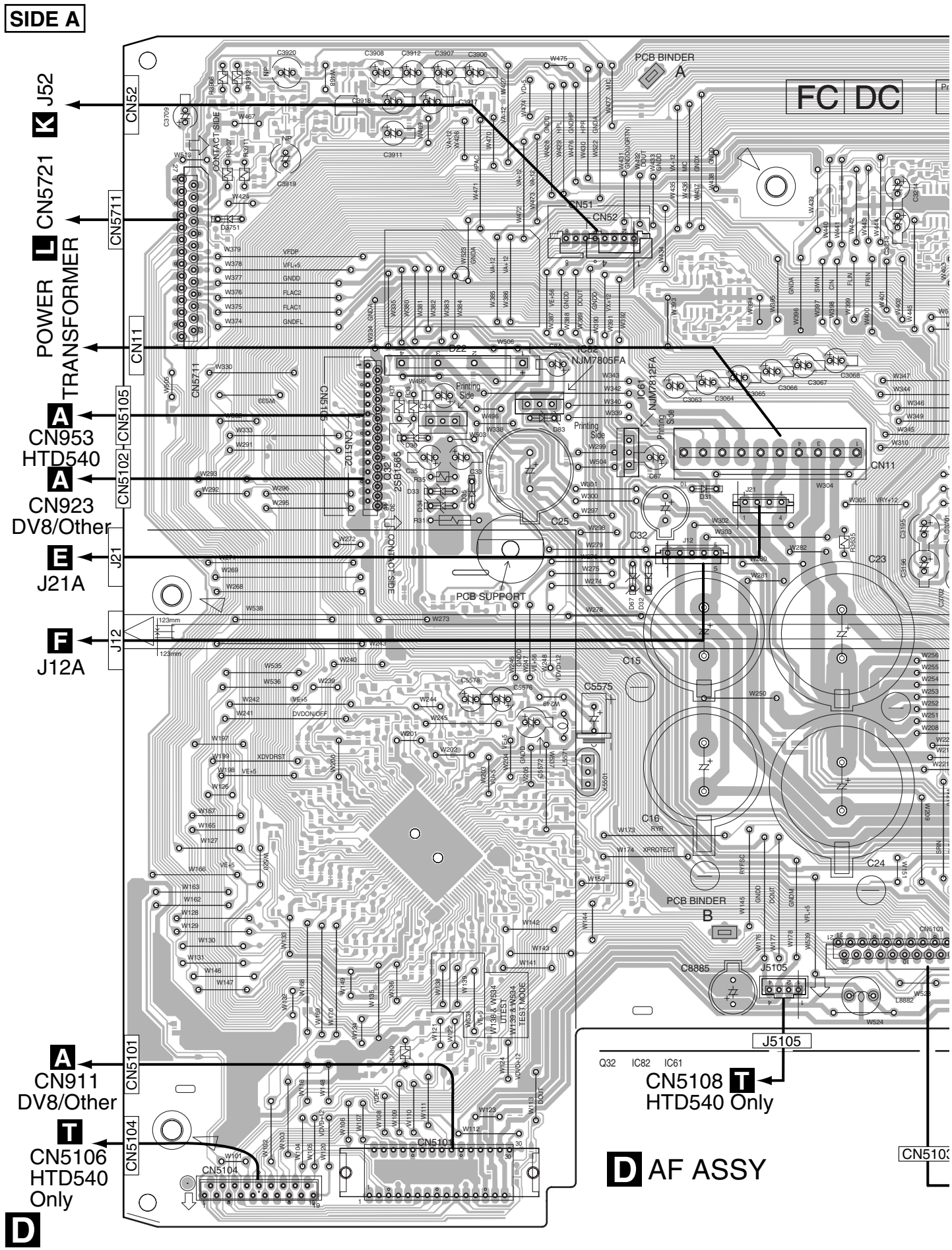
(ANP7463-B)

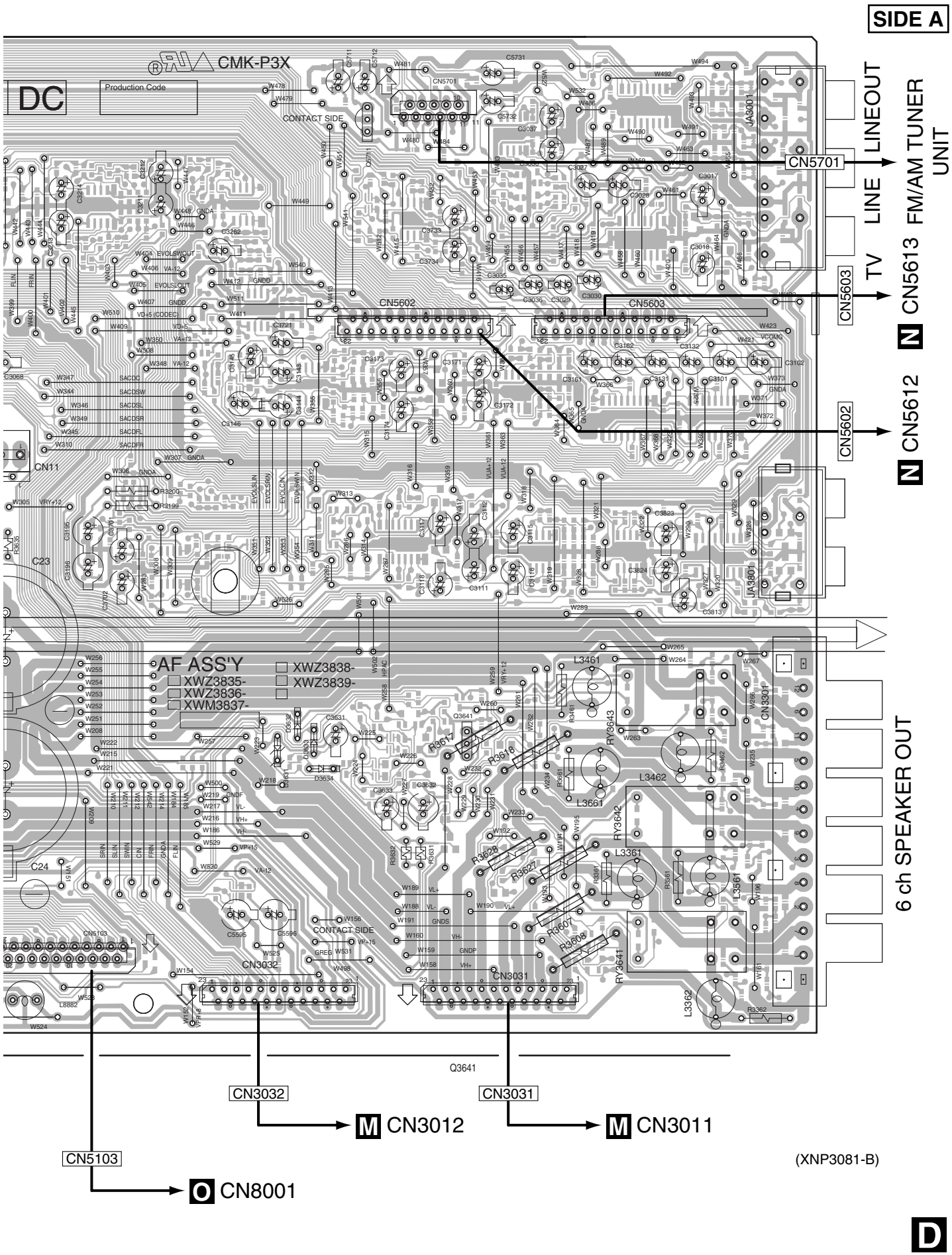
A DVDM ASSY



(ANP7463-B)

4.5 AF ASSY


SIDE A
K J52
L CN5721
POWER TRANSFORMER
A CN953 HTD540
A CN923 DV8/Other
E J21A
F J12A
A CN911 DV8/Other
T CN5106 HTD540 Only
D
T CN5108 HTD540 Only
D AF ASSY
FC DC
PCB BINDER A
PCB BINDER B
PCB SUPPORT
CONTACT SIDE
Printing Side
CN52
CN51
CN11
CN5711
CN5105
CN5102
CN5101
CN5104
CN5103
J21
J12
J5105
IC82 NJM7805FA
IC61 NJM7812FA
Q32 2SB1565
TEST MODE


SIDE A
CMK-P3X
DC
Production Code
CONTACT SIDE
AF ASS'Y
XWZ3835-
XWZ3836-
XWM3837-
XWZ3838-
XWZ3839-
CN5701
CN5602
CN5603
CN11
CN3032
CN3031
CN5103
C23
C24
JA3001
JA3301
CN3301
L3461
L3462
L3661
L3361
L3561
L3362
RY3643
RY3642
RY3641
Q3641
CN5701 LINEOUT
TV LINE FM/AM TUNER UNIT
CN5603 N CN5613
CN5602 N CN5612
6 ch SPEAKER OUT
CN3032 M CN3012
CN3031 M CN3011
CN5103 O CN8001
(XNP3081-B)
D

SIDE B

A

Q3004 Q3007

IC3001

Q3904
Q3907
Q3902
Q3906

IC3003

Q3201 Q3901

IC3901

IC3261 Q3010 Q3009
IC3201 Q3741

Q3903

IC3252

Q3006 Q3005

B

IC3731
IC3051
IC3241

Q3001
Q3002

Q3061

Q3171

Q3121

IC3062

Q3172 Q3131

IC3161

IC3061 IC3131 Q5573

C

IC3181 Q3101 Q3174

Q3801 Q131

IC3801 IC3101 Q3102
IC3821

IC3121 Q3802

Q115 Q114
Q3122 Q3124 Q3125
IC3701 Q3123

Q3804

Q3645 Q3635 Q5571 Q5572

Q3642
Q3636

D

Q5501 Q5576
Q3612
Q3644
Q3611 Q3633

Q3632 Q3631

IC5501

Q3622 Q3639
Q3640
Q3638 Q3637

Q3803
Q5580
Q5578
Q3621
Q5575

Q5595

E

Q3601
Q5581

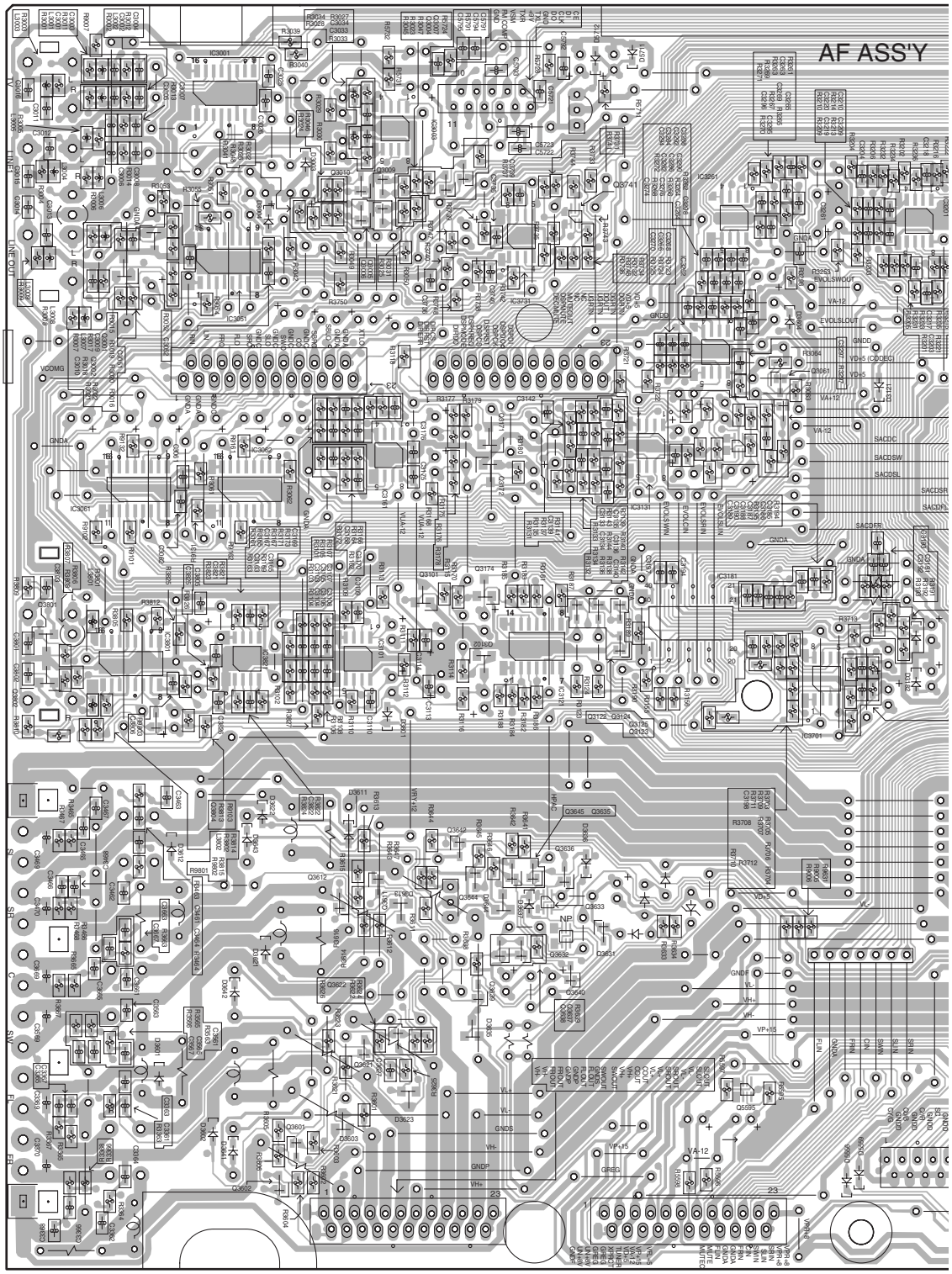
Q3602
Q3003

Q3905

Q5579

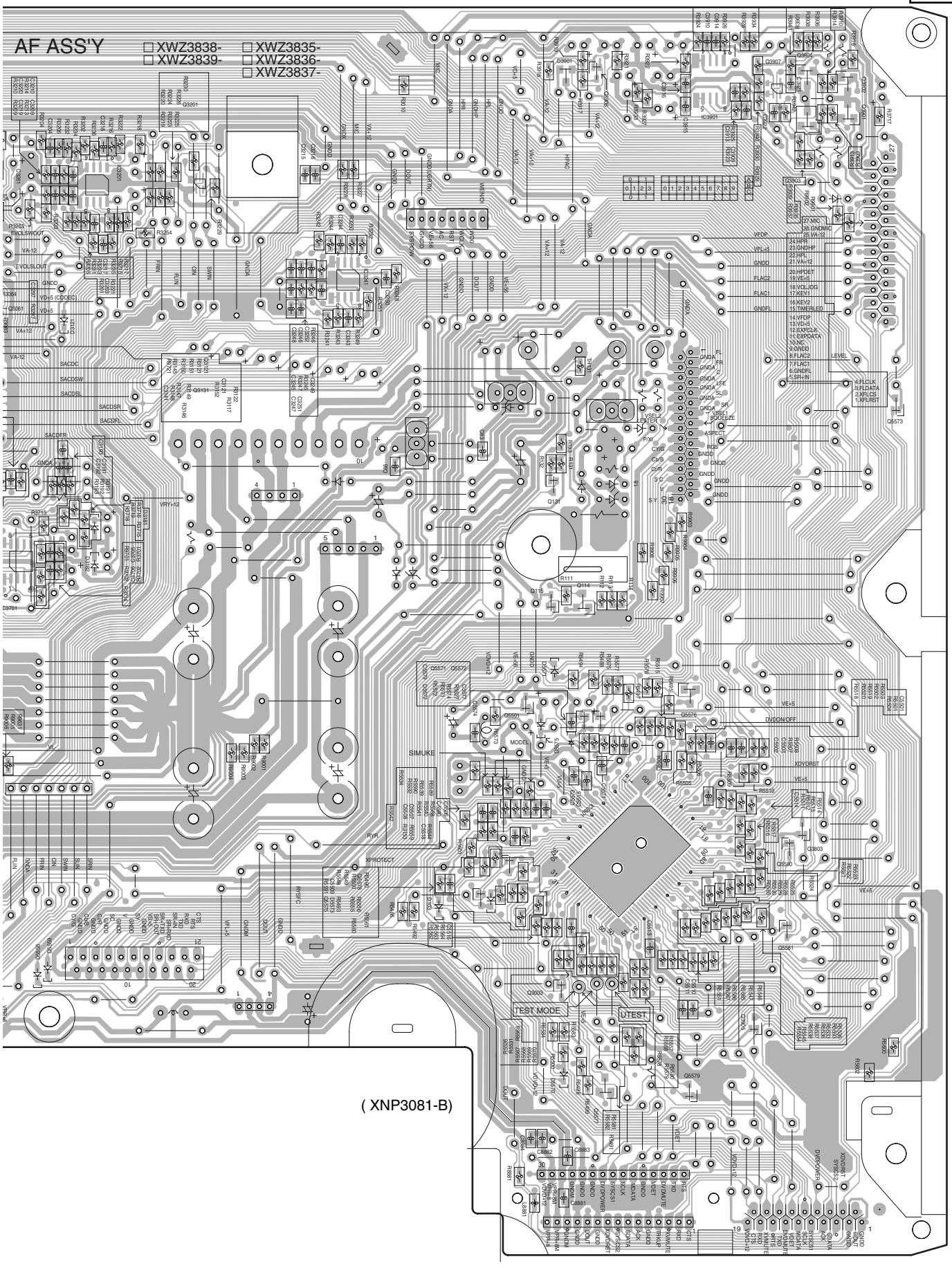
F

Q5577



D AF ASSY

SIDE B

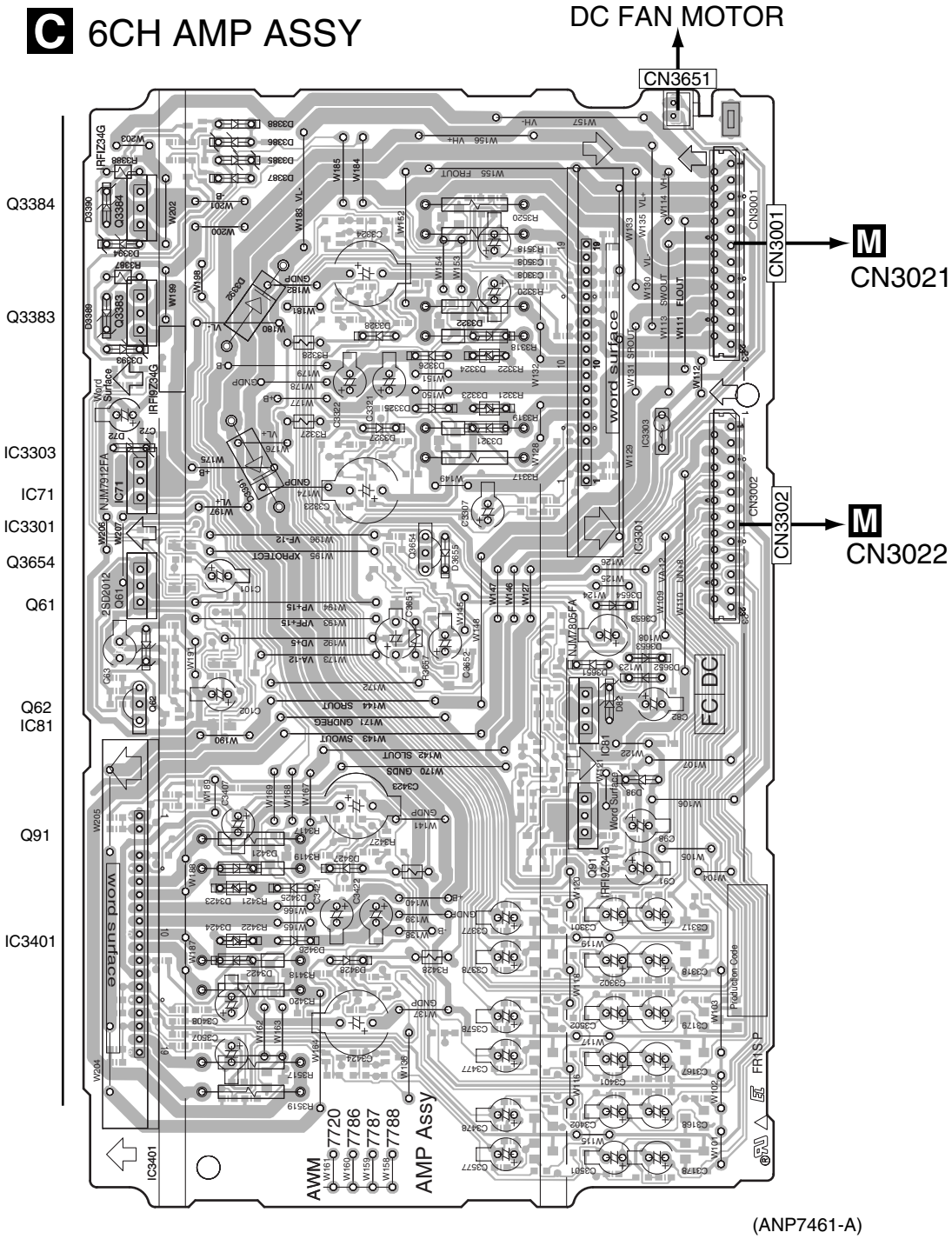


4.6 6CH AMP ASSY

SIDE A

SIDE A

C 6CH AMP ASSY



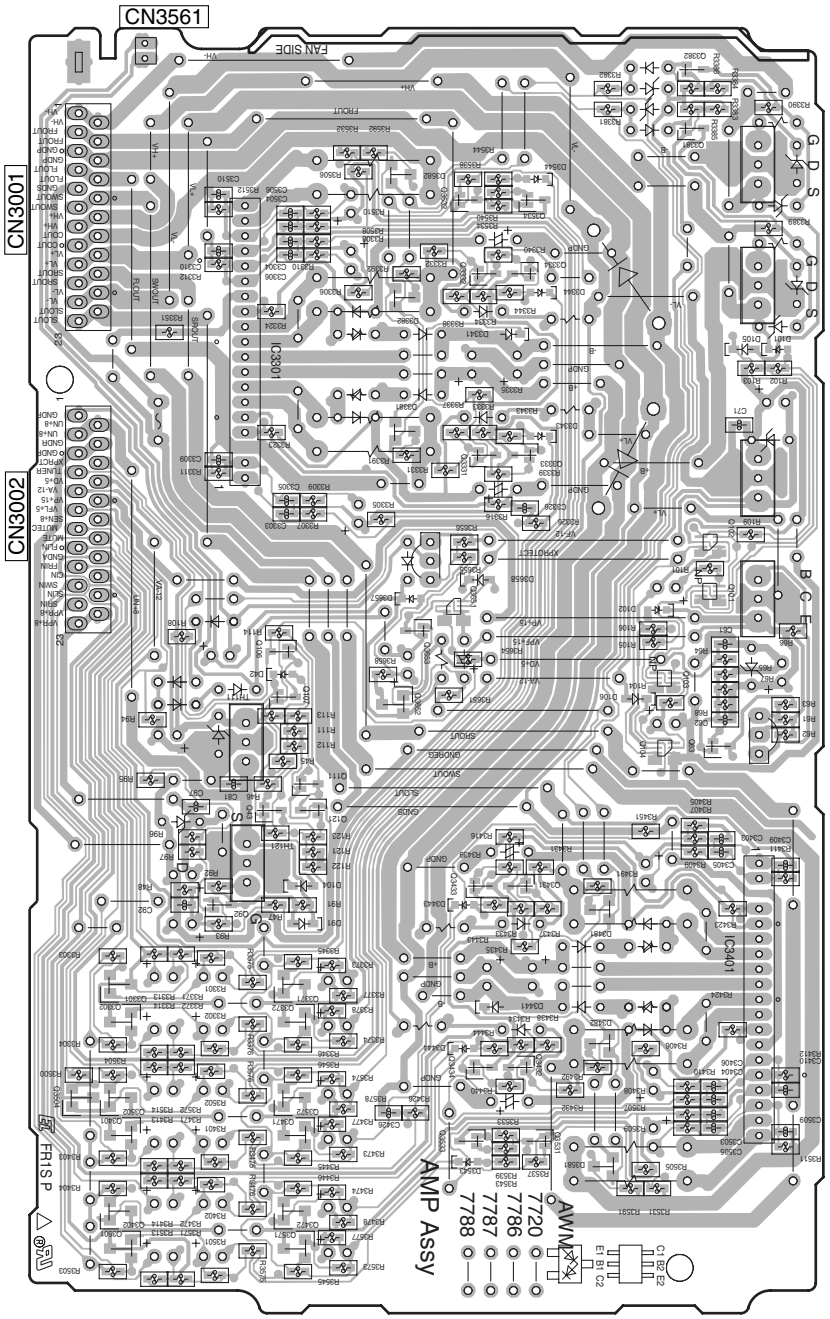
(ANP7461-A)

C **C**

SIDE B

SIDE B

C 6CH AMP ASSY



Q3382

Q3381

Q3532 Q3534

Q3332 Q3334

IC3301

Q3331 Q3333

Q102

Q3651

Q101

Q3653

Q106 Q103

Q107 Q3652

Q104 Q63

Q111

Q43 Q121

Q3433 Q3431

Q92 Q92

IC3401

Q3301 Q3371

Q3302 Q3372

Q3434 Q3432

Q3504 Q3502 Q3572

Q3401 Q3471

Q3533 Q3531

Q3402 Q3472

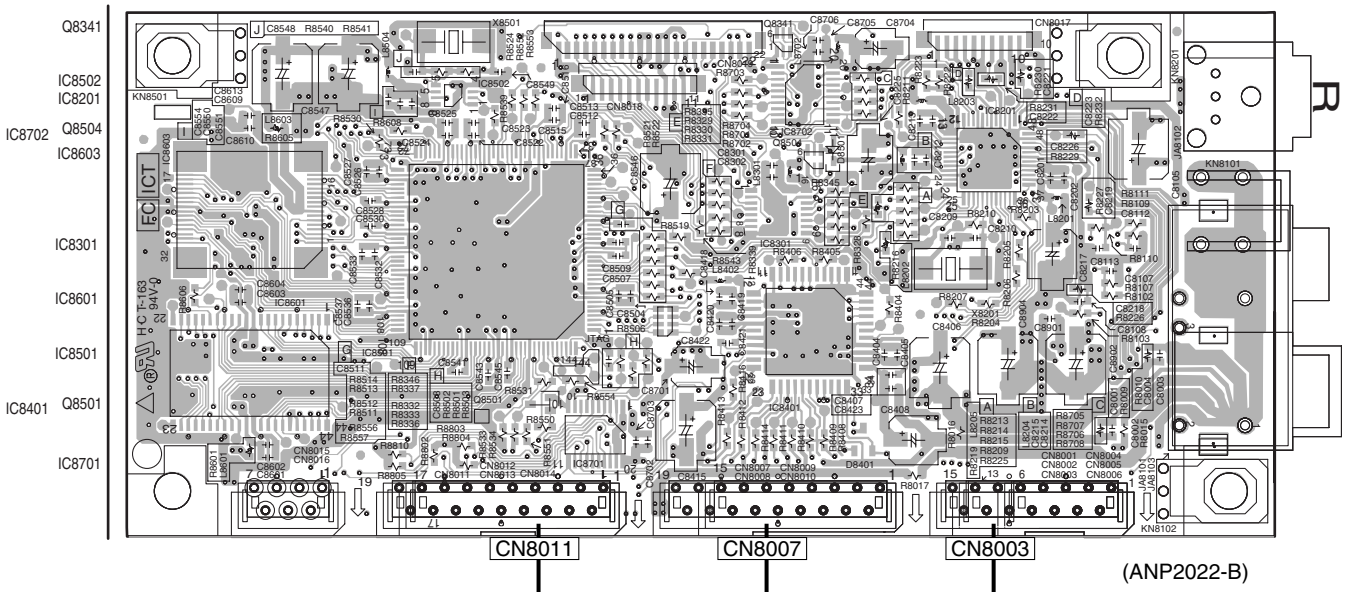
Q3501 Q3571

(ANP7461-A)

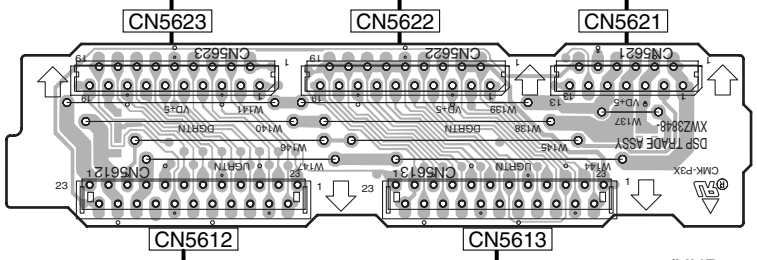
4.7 DSP, DSP TRADE and AMP TRADE ASSYS

SIDE A **SIDE A**

B DSP ASSY

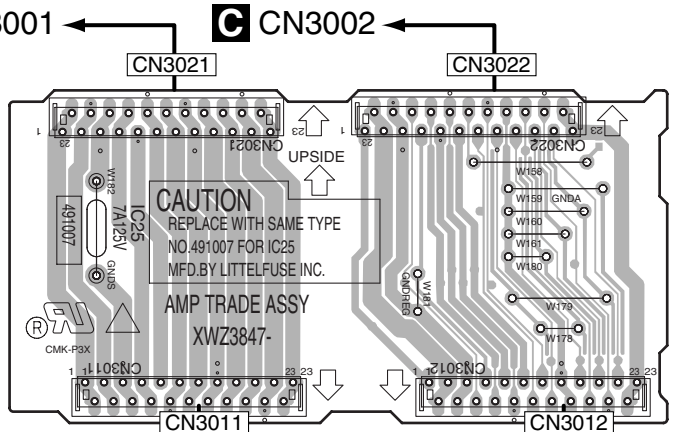


N DSP TRADE ASSY



D CN5602 D CN5603

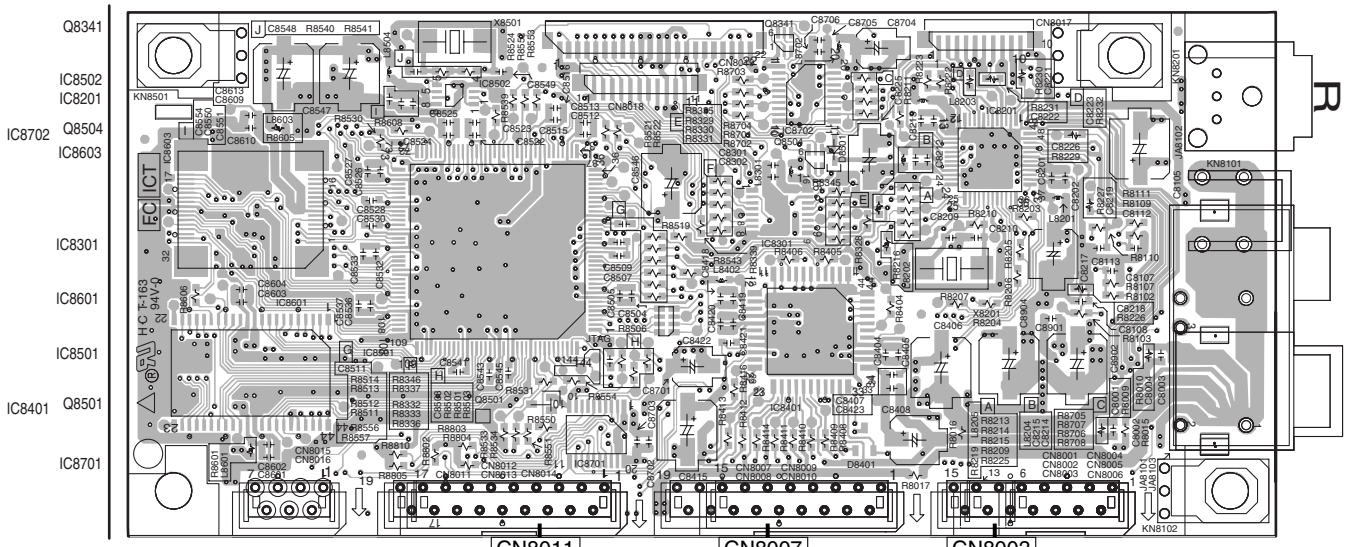
M AMP TRADE ASSY



SIDE A

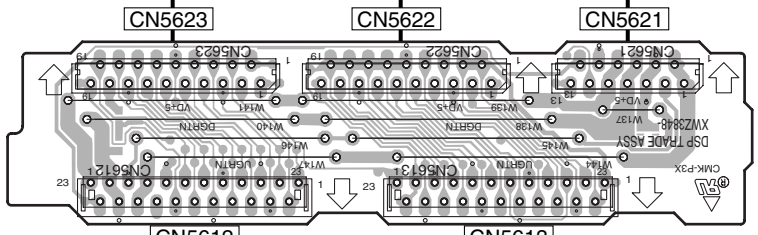
SIDE A

B DSP ASSY



(ANP2022-B)

N DSP TRADE ASSY

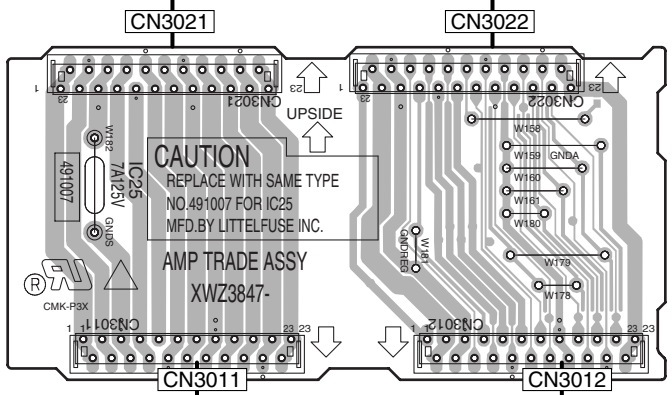


D CN5602

D CN5603

(XNP3082-B)

M AMP TRADE ASSY



D CN3031

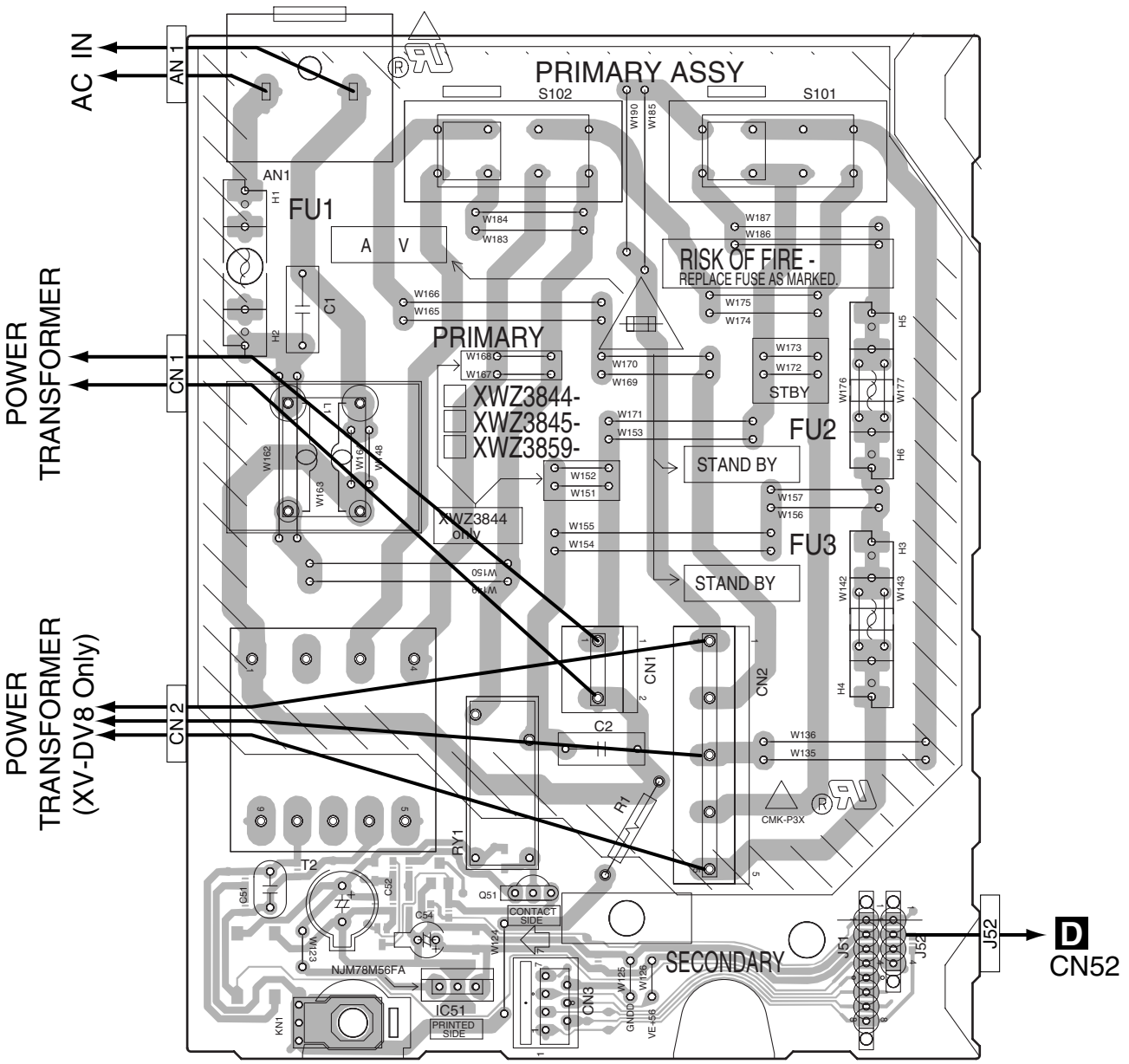
D CN3032

(XNP3082-B)

4.8 VIDEO JACK and PRIMARY ASSYS

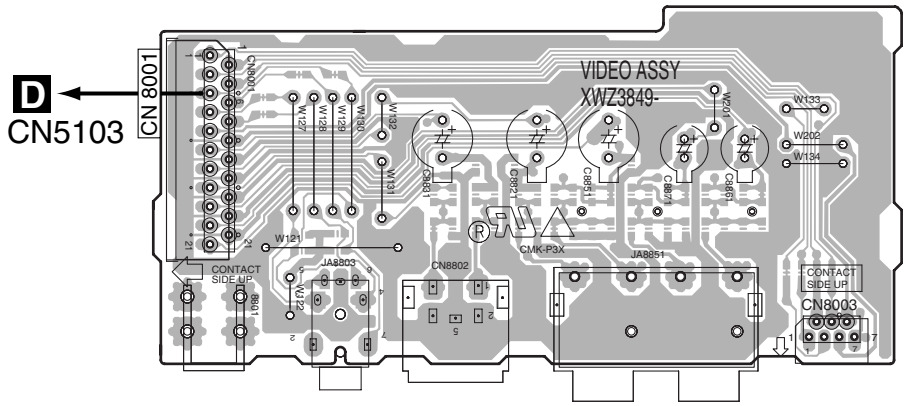
SIDE A **SIDE A**

K PRIMARY ASSY



(XNP3082-B)

O VIDEO JACK ASSY



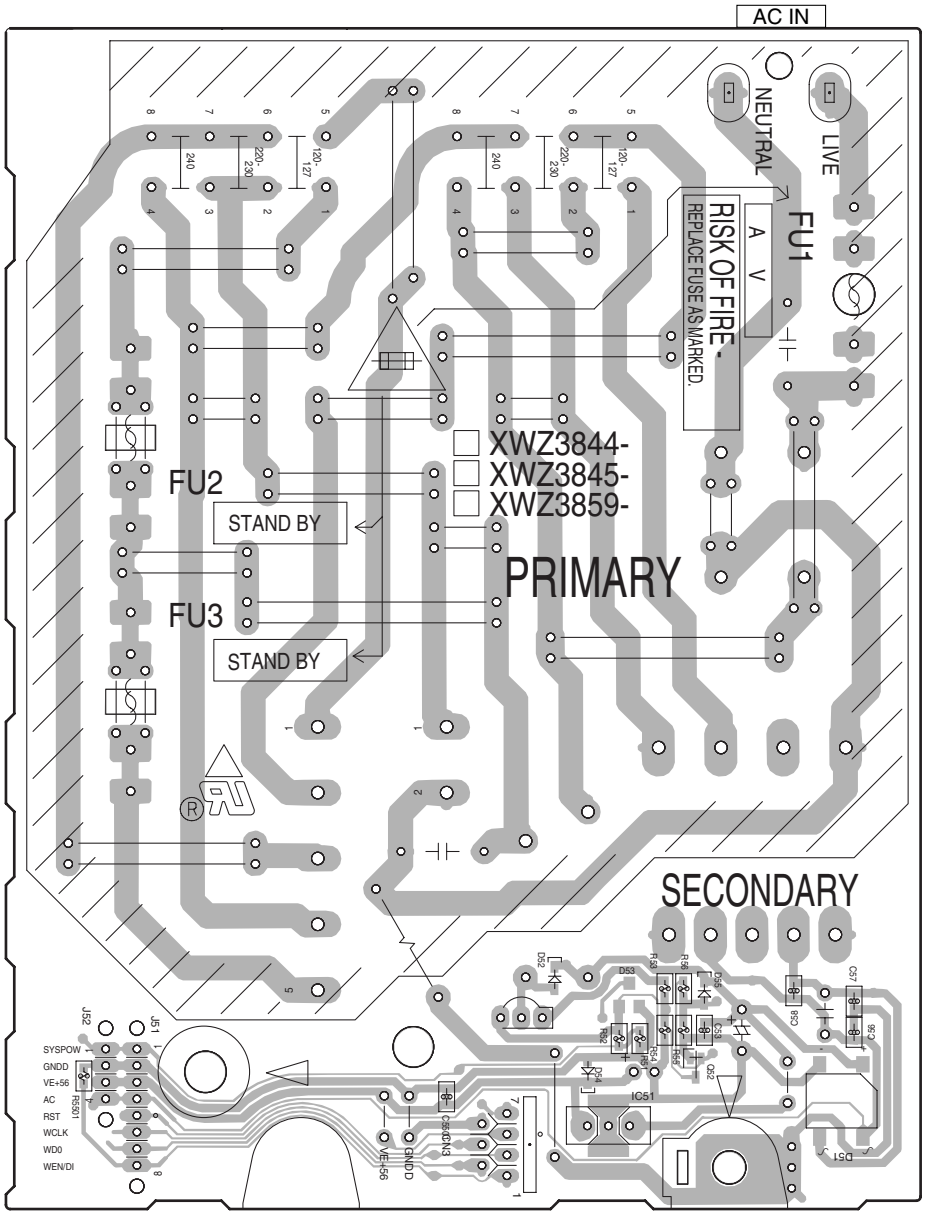
(XNP3082-B)

K O K O

SIDE B

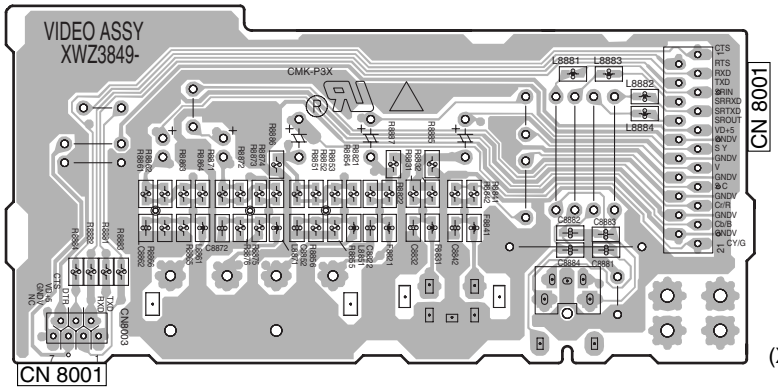
SIDE B

K PRIMARY ASSY



(XNP3082-B)

O VIDEO JACK ASSY



(XNP3082-B)

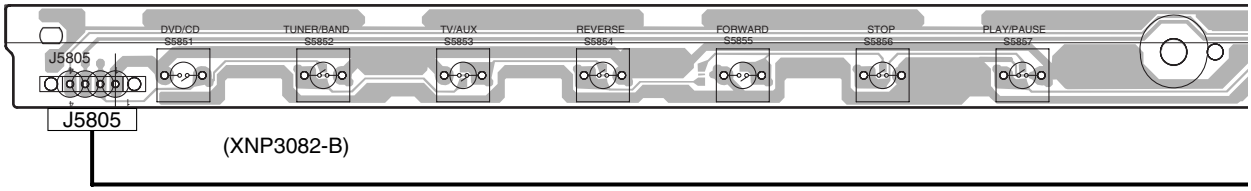
K O

K O

4.9 DISPLAY, JOG, DISC KEY, HP MIC, DIODE L, R and FUNC KEY ASSYS

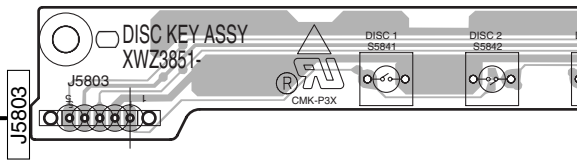
SIDE A

P FUNCTION KEY ASSY

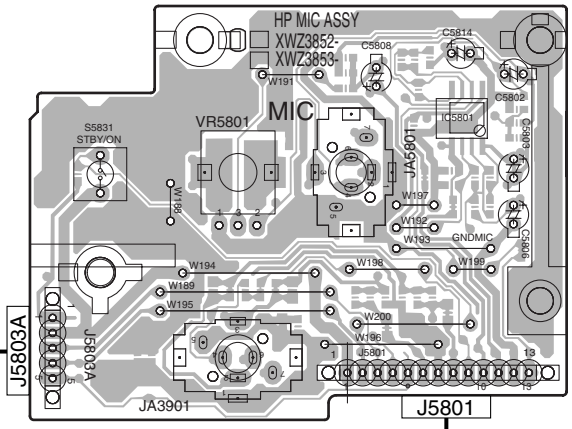


(XNP3082-B)

Q DISC KEY ASSY

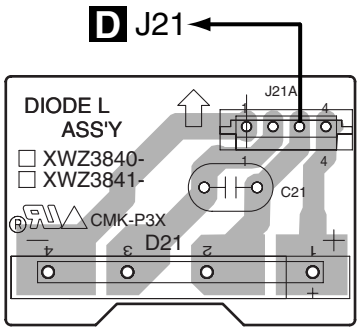


R HP MIC ASSY



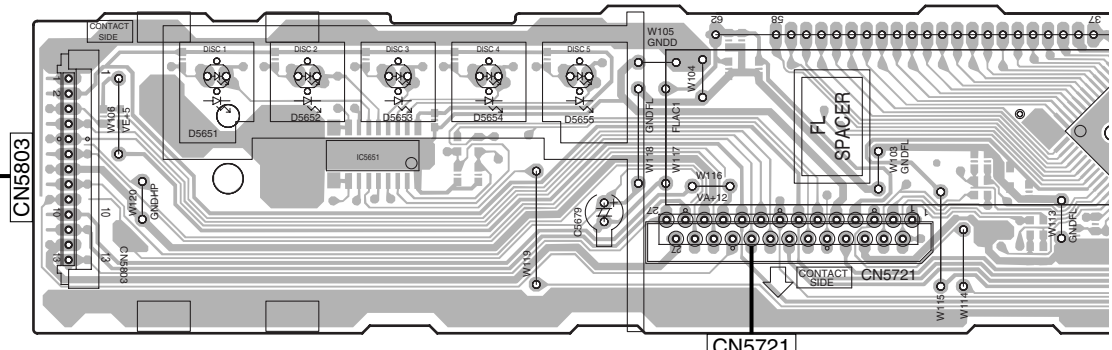
(XNP3082-B)

E DIODE L ASSY



(XNP3081-B)

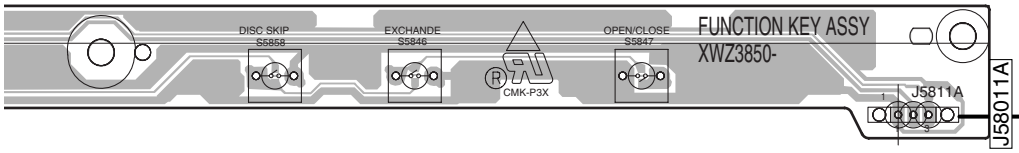
L DISPLAY ASSY



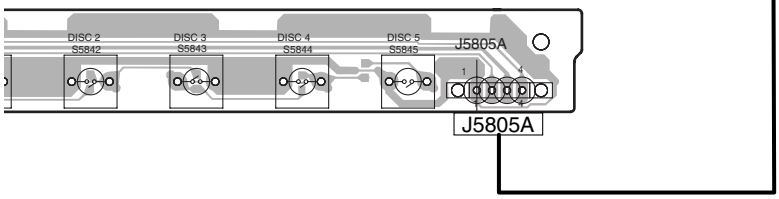
D CN5711

E L P Q R

SIDE A



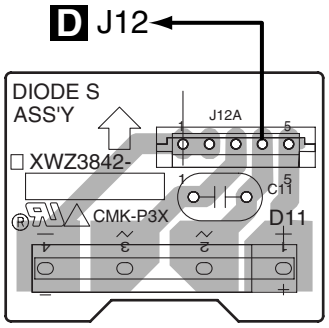
(XNP3082-B)



SSY

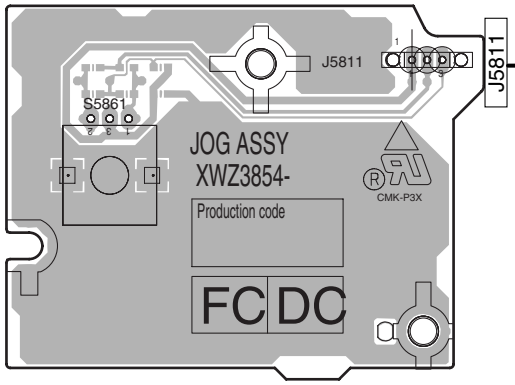
B)

F DIODE S ASSY

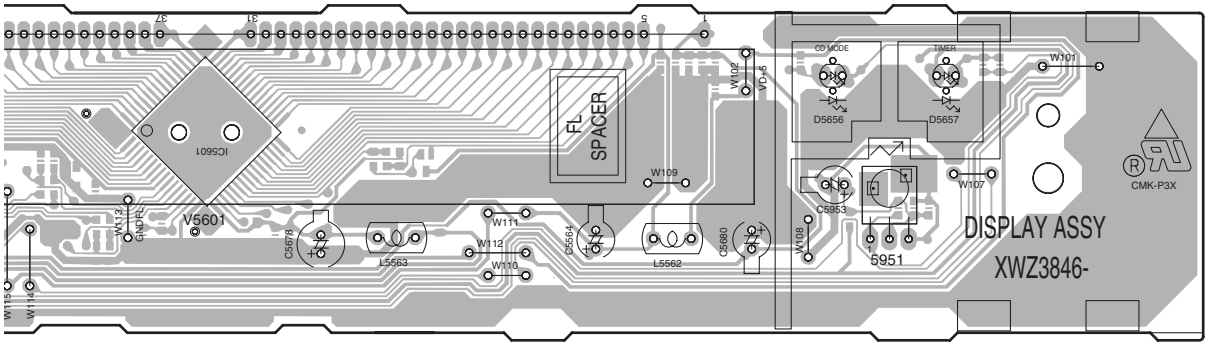


(XNP3081-B)

S JOG ASSY



(XNP3082-B)

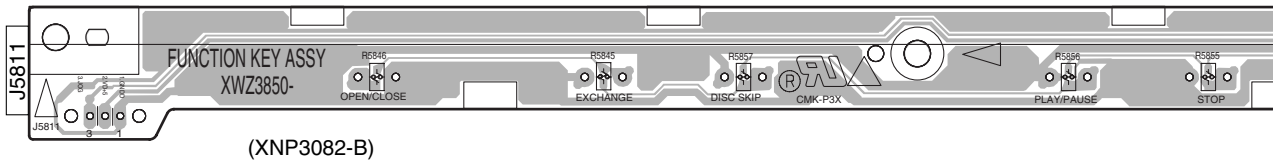


(XNP3082-B)

F L P Q S

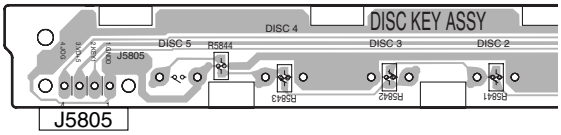
SIDE B

P FUNCTION KEY ASSY

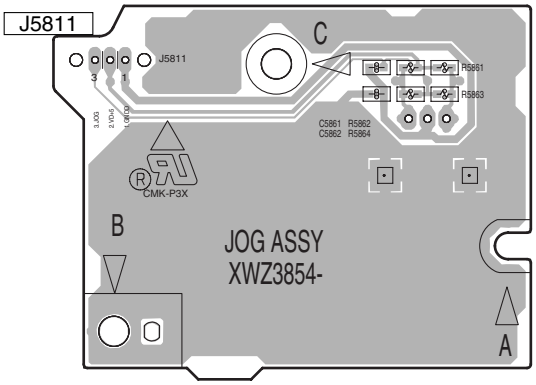


(XNP3082-B)

Q DISC KEY ASSY

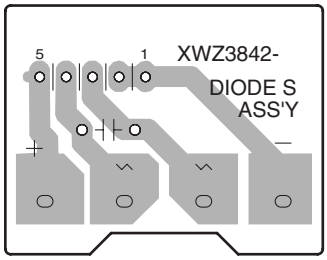


S JOG ASSY



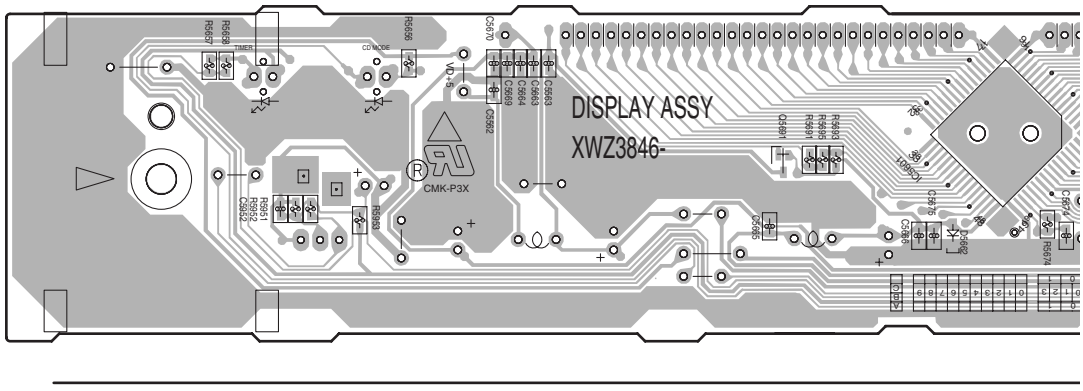
(XNP3082-B)

F DIODE S ASSY



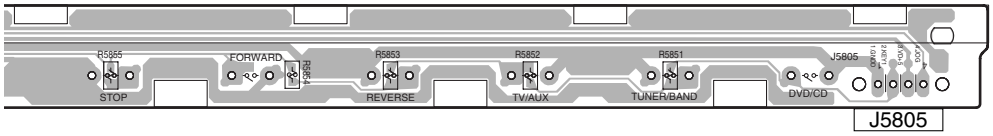
(XNP3081-B)

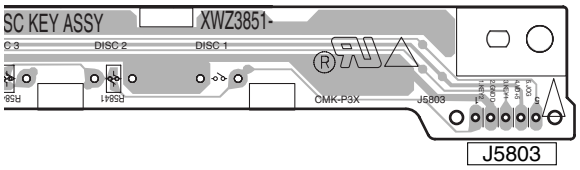
L DISPLAY ASSY



F L P Q S

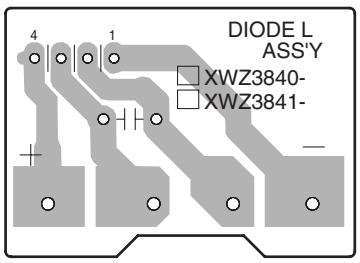
SIDE B





SSY

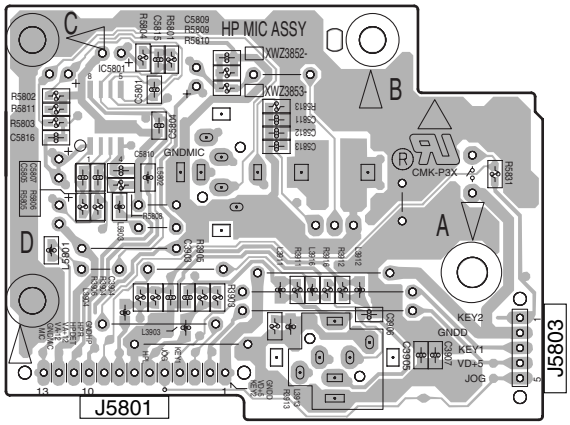
E DIODE L ASSY



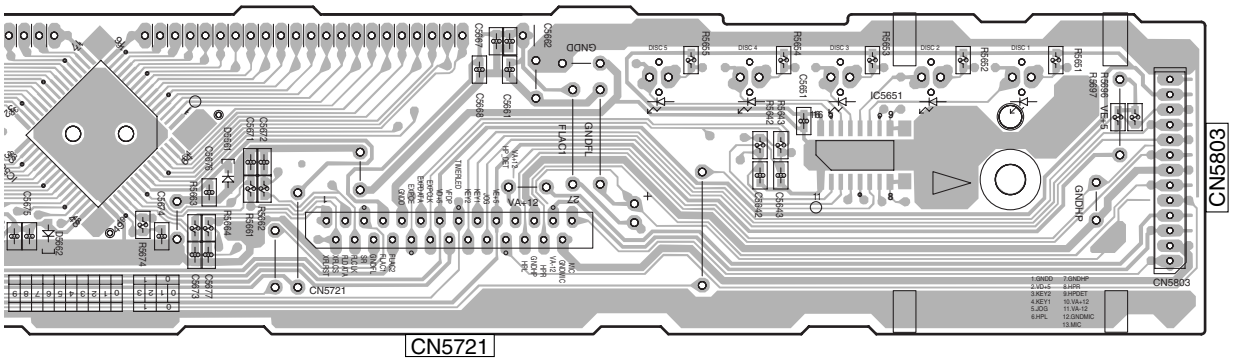
B)

(XNP3081-B)

R HP MIC ASSY



(XNP3082-B)



IC5651

(XNP3082-B)

E L P Q R

5. PCB PARTS LIST

NOTES:
- *Parts marked by "NSP" are generally unavailable because they are not in our Master Spare Parts List.*
- *The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.*
- *When ordering resistors, first convert resistance values into code form as shown in the following examples.*

Ex.1 When there are 2 effective digits (any digit apart from 0), such as 560 ohm and 47k ohm (tolerance is shown by J=5%, and K=10%).

560 Ω → 56 x 10[1] → 561 ..... RD1/4PU 5 6 1 J
47k Ω → 47 x 10[3] → 473 ..... RD1/4PU 4 7 3 J
0.5 Ω → R50 ..... RN2H R 5 0 K
1 Ω → 1R0 ..... RS1P 1 R 0 K

Ex.2 When there are 3 effective digits (such as in high precision metal film resistors).

5.62k Ω → 562 x 10[1] → 5621 ..... RN1/4PC 5 6 2 1 F

LIST OF WHOLE PCB ASSEMBLIES

Mark	Symbol and Description	XV-HTD540 /KUCXJ	XV-DV8 /DDXJ/RA	XV-DV8 /DDXJ/RB	XV-DV8 /DLXJ/NC	XV-DV8 /DPWXJ
	1..FM/AM TUNER MODULE	AXX7172	AXX7173	AXX7173	AXX7173	AXX7173
NSP	1..COMPLEX ASSY	XWM3236	XWM3237	XWM3237	XWM3237	XWM3237
	2..AMP TRADE ASSY	XWZ3847	XWZ3847	XWZ3847	XWZ3847	XWZ3847
	2..DSP TRADE ASSY	XWZ3848	XWZ3848	XWZ3848	XWZ3848	XWZ3848
	2..VIDEO JACK ASSY	XWZ3849	XWZ3849	XWZ3849	XWZ3849	XWZ3849
	2..PRIMARY ASSY	XWZ3844	XWZ3845	XWZ3845	XWZ3845	XWZ3845
	2..DISPLAY ASSY	XWZ3846	XWZ3846	XWZ3846	XWZ3846	XWZ3846
	2..JOG ASSY	XWZ3854	XWZ3854	XWZ3854	XWZ3854	XWZ3854
	2..DISC KEY ASSY	XWZ3851	XWZ3851	XWZ3851	XWZ3851	XWZ3851
	2..FUNCTION KEY ASSY	XWZ3850	XWZ3850	XWZ3850	XWZ3850	XWZ3850
	2..HP MIC ASSY	XWZ3852	XWZ3853	XWZ3853	XWZ3853	XWZ3853
	2..TRSB ASSY	XWZ3855	XWZ3855	XWZ3855	XWZ3855	XWZ3855
	2..SSRB ASSY	XWZ3856	XWZ3856	XWZ3856	XWZ3856	XWZ3856
	2..LOMB ASSY	XWZ3857	XWZ3857	XWZ3857	XWZ3857	XWZ3857
NSP	1..MAIN ASSY	XWM3233	XWM3232	XWM3266	XWM3232	XWM3232
	2..AF ASSY	XWZ3837	XWZ3836	XWZ3897	XWZ3836	XWZ3836
	2..DVD TRADE ASSY	XWZ3858	Not used	Not used	Not used	Not used
	2..DIODE L ASSY	XWZ3840	XWZ3841	XWZ3841	XWZ3841	XWZ3841
	2..DIODE S ASSY	XWZ3842	XWZ3842	XWZ3842	XWZ3842	XWZ3842
	2..SSIB ASSY	XWZ3843	XWZ3843	XWZ3843	XWZ3843	XWZ3843
	1..AMP MODULE 6CH	AXQ7242	AXQ7242	AXQ7242	AXQ7242	AXQ7242
	2..6CH AMP ASSY	AZW7283	AZW7283	AZW7283	AZW7283	AZW7283
	1..DSP ASSY	AWX8523	AWX8523	AWX8523	AWX8523	AWX8523
	1..DVDM ASSY	AWM7882	AWM7881	AWM7881	AWM7881	AWM7881

DAF ASSY

XWZ3836, XWZ3897 and XWZ3837 are constructed the same except for the following :

Mark	Symbol and Description	XWZ3837	XWZ3836	XWZ3897
	IC3003,IC3101,IC3131,IC3161,IC3201	HA17558AF	NJM4558MD	NJM4558MD
	IC3241,IC3252,IC3261,IC3731	HA17558AF	NJM4558MD	NJM4558MD
	IC3701	Not used	NJM4558MD	NJM4558MD
	Q3061,Q5580,Q5581	DTA124EUA	Not used	Not used
	Q3101,Q3102,Q3171,Q3172,Q3174	Not used	2SD2114K	2SD2114K
	Q3131	Not used	XP4506	XP4506
	D3604	MA111	Not used	Not used
	D3751	MA111	1SS133	1SS133
	C3017,C3018,C3063- C3068	CEAT100M50	Not used	Not used
	C3061, C3062	CKSRYB103K50	Not used	Not used
	C3170	CKSRYB122K50	CKSRYB682K50	CKSRYB682K50
	C3705,C3706	Not used	CKSRYB103K50	CKSRYB103K50
	C3709	Not used	CEAT101M16	CEAT101M16
	C3721	Not used	CEAT101M50	CEAT101M50
	C3739,C3740	Not used	CCSRCH151J50	CCSRCH151J50
	L8881	Not used	VTL1075	VTL1075
	R3051,R3061,R3062,R3193	RS1/16S102J	Not used	Not used
	R3052	RS1/16S103J	Not used	Not used
	R3053- R3055,R3718,R3719,R9101	Not used	RS1/16S0R0J	RS1/16S0R0J
	R3063	RS1/16S101J	Not used	Not used
	R3064,R5590	RS1/16S473J	Not used	Not used
	R3114,R3115,R3170,R3180,R3703	Not used	RS1/16S103J	RS1/16S103J
	R3704-R3706,R3735,R3736	Not used	RS1/16S103J	RS1/16S103J
	R3145,R3146, R3177	RS1/16S0R0J	RS1/16S271J	RS1/16S271J
	R3149,R3150,R3179	Not used	RS1/16S472J	RS1/16S472J
	R3162	RS1/16S123J	RS1/16S222J	RS1/16S222J
	R3164,R3166	RS1/16S183J	RS1/16S332J	RS1/16S332J
	R3178	RS1/16S0R0J	RS1/16S123J	RS1/16S123J
	R3709,R3712	RS1/16S0R0J	RS1/16S393J	RS1/16S393J
	R3710,R3711,R3733,R3734	Not used	RS1/16S393J	RS1/16S393J
	R3713,R3714	Not used	RS1/16S220J	RS1/16S220J
	R3717	RS1/16S0R0J	RS1/16S393J	RS1/16S393J
	R3721	Not used	RS1/16S273J	RS1/16S273J
	R3722,R3731,R3732	RS1/16S0R0J	RS1/16S273J	RS1/16S273J
	R3723	Not used	RS1/16S682J	RS1/16S682J
	R3724,R3737,R3738	RS1/16S0R0J	RS1/16S103J	RS1/16S103J
	R3741,R3742	RS1/16S0R0J	RS1/16S123J	RS1/16S123J
	R3743,R3744	RS1/16S472J	RS1/16S103J	RS1/16S103J
	R5589	Not used	RS1/16S473J	RS1/16S473J
	R5532	RS1/16S473J	RS1/16S473J	RS1/16S393J
	R5539	Not used	RS1/16S473J	RS1/16S683J
	R8881	RS1/16S0R0J	RS1/16S221J	RS1/16S221J
	R9102,R9131,R9132,R9161,R9162	Not used	RS1/16S0R0J	RS1/16S0R0J
	R9007,R9701,R9702,R9721,R9881	RS1/16S0R0J	Not used	Not used
	CN5101 B to B Connector 30P	Not used	VKN1627	VNK1627
	CN5102 FFC Connector 18P	Not used	VKN1249	VNK1249
	CN5104 1.25FJ Connector	19R-1.25FJ	Not used	Not used
	CN5105 FFC Connector 30P	VKN1261	Not used	Not used
	J5105 Connector Assy	PF04PG-C12	Not used	Not used

Mark	No.	Description	Part No.

ADVDM ASSY (AWM7881)

SEMICONDUCTORS

	IC151	BA5912AFP-Y
	IC602	HY57V641620HGT-H
	IC101	M63018FP
⚠	IC431	MM1565AF
	IC501	MM1623BF
⚠	IC421	PQ018EH01ZP
⚠	IC411	PQ018EZ01ZP
⚠	IC441	PQ20WZ11
⚠	IC401	R1224N102H
	IC601	STM5589CVS
	IC301	STM6316ATPAZ
	IC911	TC74VHC08FT
	IC901	TC74VHCT125AFT
	IC604	TC7WU04FU
	IC603	VYW2195
	Q192, Q194, Q390	2SA1576A
⚠	Q451	2SA1576A
	Q923, Q924, Q926	2SA1576A
	Q191, Q193, Q202, Q212, Q452	2SC4081
	Q921	DTA124EUA
	Q951	DTC114TUA
	Q724, Q977	DTC114YUA
	Q922, Q925	DTC124EUA
	Q201, Q211	HN1A01F
	Q911	RN1903
	Q603	RN4982
⚠	Q401	RSQ035P03
	D431, D432	1SR154-400
	D402, D403, D922-D927	1SS355
	D603	RB501V-40
	D401	RSX201L-30
	D921	UDZS4.7B

COILS AND FILTERS

	L401 Power Inductor	ATH7011
	L100, L111, L623	ATL7010
	Chip Beads	
	L402 Inductor	CTH1254
	L390	LCYA2R7J2520

CAPACITORS

	C408	CCSRCH121J50
	C390	CCSRCH180J50
	C142	CCSRCH221J50
	C200	CCSRCH331J50
	C690	CCSRCH470J50
	C392	CCSRCH560J50
	C393, C640, C644	CCSRCH7R0D50
	C452	CEVW100M16
	C101, C151, C401, C404, C410	CEVW101M16
	C412, C422, C443, C561, C564	CEVW101M16
	C600, C621, C660	CEVW101M16
	C415, C425	CEVW101M4
	C201, C211	CEVW470M16
	C406	CKSQYB104K25
	C431	CKSQYB105K16
	C433	CKSQYB225K10
	C127, C128, C381, C562, C563	CKSRYB102K50
	C624	CKSRYB102K50
	C103, C112-C114, C124, C125	CKSRYB103K50
	C130, C133, C134, C155, C158	CKSRYB103K50
	C172, C182, C355	CKSRYB103K50
	C102, C132, C139, C152	CKSRYB104K16
	C160, C161, C163, C174, C176	CKSRYB104K16
	C230, C232, C233, C300, C307	CKSRYB104K16
	C309, C315, C318, C323, C326	CKSRYB104K16
	C335, C342, C348, C357, C362	CKSRYB104K16
	C373, C377, C388, C391	CKSRYB104K16
	C413, C414, C423, C424	CKSRYB104K16
	C441, C442, C451, C511, C531	CKSRYB104K16
	C551, C565, C571, C604, C607	CKSRYB104K16
	C614, C619, C622, C623	CKSRYB104K16
	C626-C632, C636, C637, C641	CKSRYB104K16
	C647-C649, C659, C664, C671	CKSRYB104K16
	C681, C684, C694, C698, C902	CKSRYB104K16
	C912, C921	CKSRYB104K16
	C501, C521, C541, C603, C620	CKSRYB105K10
	C625	CKSRYB105K10
	C394	CKSRYB152K50
	C126, C346	CKSRYB223K50
	C202, C205, C212, C215	CKSRYB472K50
	C402, C403, C405, C409 (10/16V)	DCH1165

RESISTORS

	R201	RAB4C220J
	R211	RAB4C390J
	R1011-R1013, R151, R210	RS1/10S0R0J
	R387-R389, R412-R415, R417	RS1/10S0R0J
	R421, R422, R561, R600	RS1/10S0R0J
	R403	RS1/10S100J
	R105, R106, R115-R120	RS1/10S4R7J
	R104, R107	RS1/10S6R8J
	R125, R144, R169, R172-R176	RS1/16S1002F
	R179, R182, R330, R331, R628	RS1/16S1002F
	R635	RS1/16S1002F
	R168	RS1/16S1102F
	R301	RS1/16S1202F
	R502, R512, R522, R532, R542	RS1/16S1500F
	R552	RS1/16S1500F
	R408	RS1/16S1502F
	R178	RS1/16S1602F
	R410	RS1/16S1802F
	R443	RS1/16S2001F
	R409	RS1/16S2702F
	R441	RS1/16S4701F
	R101, R102, R123, R142, R143	RS1/16S5600F
	R442	RS1/16S6801F
	R411	RS1/8S0R0J
	Other Resistors	RS1/16S###J

OTHERS

	CN123 PH Connector	B2B-PH-SM3
	7P Flexible Cable	VDA1681
	CN124 8P FFC Connector	VKN1412
	CN122 17P FFC Connector	VKN1421
	CN923 18P FFC Connector	VKN1422
	CN121 24P FFC Connector	VKN1464
	CN911 B to B Connector	VKN1626
	X601 (27MHz)	VSS1172
	X301 (20MHz)	VSS1186

Mark	No.	Description	Part No.

ADVDM ASSY (AWM7882)

SEMICONDUCTORS

	IC741,IC761,IC781	BA4558F-HT
	IC151	BA5912AFP-Y
	IC861,IC871	DSD1702EG
	IC851	DSD1791DBR
	IC602	HY57V281620HCT
	IC802	K4S641632F-TC75
	IC101	M63018FP
⚠	IC431	MM1565AF
	IC501	MM1623BF
⚠	IC421	PQ018EH01ZP
⚠	IC411	PQ018EZ01ZP
⚠	IC441	PQ20WZ11
⚠	IC401	R1224N102H
	IC801	SAA7893HL/C2
	IC601	STI5588CVB
	IC301	STM6316ATPAZ
	IC911	TC74VHC08FT
	IC901	TC74VHCT125AFT
	IC807	TC7SET08FU
	IC691	TC7SU04FU
	IC803	TC7WH34FU
	IC604,IC804	TC7WU04FU
	IC603	VYW2182
	Q192,Q194,Q390	2SA1576A
⚠	Q451	2SA1576A
	Q744,Q764,Q923,Q924,Q926	2SA1576A
	Q191,Q193,Q202,Q212,Q452	2SC4081
	Q741,Q742,Q761,Q762	2SD2114K
	Q781,Q782	2SD2114K
⚠	Q401	CPH6314
	Q921	DTA124EUA
	Q951	DTC114TUA
	Q722,Q746,Q763,Q977	DTC114YUA
	Q922,Q925	DTC124EUA
	Q201,Q211	HN1A01F
	Q911	RN1903
	Q603	RN4982
	D431,D432	1SR154-400
	D402,D403,D743,D761,D782	1SS355
	D922-D927	1SS355
	D401	RB051L-40
	D603	RB501V-40
	D921	UDZS4.7B
	D741,D742,D781	UDZS6.2B

COILS AND FILTERS

	L401 POWER INDUCTOR	ATH7011
	L100,L111,L413,L414,L623 CHIP BEAD	ATL7010
	L402 INDUCTOR	CTH1254
	L390	LCYA2R7J2520
	L1056-L1061 CHIP BEAD	VTL1078

CAPACITORS

	C408,C747,C748,C751,C752	CCSRCH121J50
	C390	CCSRCH180J50
	C142	CCSRCH221J50
	C765,C766,C785,C786	CCSRCH270J50
	C200,C763,C764,C783,C784	CCSRCH331J50
	C690	CCSRCH470J50
	C755,C756,C773,C774	CCSRCH471J50
	C793,C794	CCSRCH471J50
	C392	CCSRCH560J50
	C393,C640,C644	CCSRCH7R0D50
	C452,C753,C754,C771,C772	CEVW100M16
	C791,C792	CEVW100M16
	C101,C151,C401,C404,C410	CEVW101M16
	C412,C422,C443,C561,C564	CEVW101M16
	C600,C750,C797-C799,C809	CEVW101M16
	C851,C853,C854,C861	CEVW101M16
	C863,C864,C871,C873,C874	CEVW101M16
	C415,C425,C621,C660,C812	CEVW101M4
	C857	CEVW101M4
	C201,C211	CEVW470M16
	C761,C762,C781,C782,C867	CEVW470M6R3
	C877	CEVW470M6R3
	C406	CKSQYB104K25
	C431	CKSQYB105K16
	C433	CKSQYB225K10
	C127,C128,C381,C562,C563	CKSRYB102K50
	C624,C802,C810	CKSRYB102K50
	C103,C112-C114,C124,C125	CKSRYB103K50
	C130,C133,C134,C155,C158	CKSRYB103K50
	C172,C182,C355,C805	CKSRYB103K50
	C102,C132,C139,C152	CKSRYB104K16
	C160,C161,C163,C174,C176	CKSRYB104K16
	C300,C307,C309,C315,C318	CKSRYB104K16
	C323,C326,C335,C342,C348	CKSRYB104K16
	C357,C362,C373,C377,C388	CKSRYB104K16
	C391,C413,C414,C423,C424	CKSRYB104K16
	C441,C442,C451,C511,C531	CKSRYB104K16
	C551,C565,C571,C604,C607	CKSRYB104K16
	C614,C619,C622,C623	CKSRYB104K16
	C626-C632,C636,C637,C641	CKSRYB104K16
	C647-C649,C659,C664,C671	CKSRYB104K16
	C681,C684,C691,C694,C698	CKSRYB104K16
	C741,C742,C749,C767-C769	CKSRYB104K16
	C787-C789,C801,C803,C804	CKSRYB104K16
	C806-C808,C811,C813-C826	CKSRYB104K16
	C829,C852,C855,C856	CKSRYB104K16
	C858,C859,C862,C865,C866	CKSRYB104K16
	C872,C875,C876,C902,C912	CKSRYB104K16
	C921	CKSRYB104K16
	C230,C232,C233,C501,C521	CKSRYB105K10
	C541,C603,C620,C625	CKSRYB105K10
	C757,C758,C795	CKSRYB105K10
	C394,C743-C746	CKSRYB152K50
	C126,C346	CKSRYB223K50
	C202,C205,C212,C215	CKSRYB472K50
	C402,C403,C405,C409	DCH1165

RESISTORS

	R824,R825,R836-R838	RAB4C0R0J
	R201	RAB4C220J
	R211	RAB4C390J
	R1001-R1006,R1011-R1013,R1069	RS1/10S0R0J
	R151,R210,R387-R389,R412	RS1/10S0R0J
	R415,R417,R421,R422,R483	RS1/10S0R0J

Mark	No.	Description	Part No.
	R485,R561,R600,R840,R884		RS1/10S0R0J
	R403		RS1/10S100J
	R105,R106,R115-R120		RS1/10S4R7J
A	R104,R107		RS1/10S6R8J
	R125,R144,R169,R172-R176		RS1/16S1002F
	R179,R182,R330,R331,R628		RS1/16S1002F
	R635,R761-R764,R781-R784		RS1/16S1002F
	R168		RS1/16S1102F
	R301		RS1/16S1202F
	R502,R512,R522,R532,R542		RS1/16S1500F
	R552		RS1/16S1500F
	R408		RS1/16S1502F
	R178		RS1/16S1602F
	R410		RS1/16S1802F
B	R443		RS1/16S2001F
	R741-R746,R751,R752		RS1/16S2201F
	R409		RS1/16S2702F
	R441		RS1/16S4701F
	R101,R102,R123,R142,R143		RS1/16S5600F
	R442		RS1/16S6801F
	R411		RS1/8S0R0J
	Other Resistors		RS1/16S###J

OTHERS

	CN123 CONNECTOR	B2B-PH-SM3
C	0 FLEXIBLE CABLE	VDA1681
	CN124 8P CONNECTOR	VKN1412
	CN122 17P CONNECTOR	VKN1421
	CN953 30P CONNECTOR	VKN1434
	CN121 24P CONNECTOR	VKN1464
	CN911 CONNECTOR	VKN1626
	X601 CRYSTAL RESONATOR (27MHz)	VSS1172
	X301 CERAMIC RESONATOR (20MHz)	VSS1186

D

B DSP ASSY

SEMICONDUCTORS

	IC8201	AK4114VQ
	IC8401	AK4628VQ
	IC8501	DSPD56367PV150
	IC8901	NJM2391DL1-33
	IC8902	NJU7223DL1-18
	IC8101	TC74HCU04AF
	IC8701	TC74LVX244FT
	IC8702	TC74VHCT244AFT
E	IC8502	TC7WU04FU
	Q8504	UMD2N
	Q8503	UN5112
	D8501	1SS355
	D8401	DAN202K
	D8402, D8502, D8503	DAP202K

COILS AND FILTERS

	L8002, L8004, L8501, L8502 Chip Solid Inductor	ATL7002
	L8101, L8103, L8201, L8203, L8204 Chip Solid Inductor	QTL1013
F	L8401, L8402, L8504, L8701, L8702	QTL1013

CAPACITORS

	C8209, C8210	CCSRCH100D50
	C8421	CCSRCH101J50
	C8106	CCSRCH221J50
	C8107	CCSRCH470J50
	C8007, C8008, C8109, C8201, C8212	CCSRCH471J50
	C8214, C8404, C8409-C8414	CCSRCH471J50
	C8416, C8417, C8419, C8505, C8507	CCSRCH471J50
	C8509, C8511, C8512, C8515, C8518	CCSRCH471J50
	C8520, C8522, C8524, C8526, C8528	CCSRCH471J50
	C8530, C8532, C8534, C8536, C8539	CCSRCH471J50
	C8541, C8543, C8545, C8551, C8703	CCSRCH471J50
	C8706	CCSRCH471J50
	C8548, C8549	CCSRCH8R0D50
	C8701, C8704	CEVW100M16
	C8105, C8406, C8415, C8546, C8547	CEVW101M16
	C8902, C8904	CEVW101M16
	C8217, C8225, C8408	CEVW470M6R3
	C8204, C8555	CKSRYB102K50
	C8009, C8104, C8405, C8418, C8517	CKSRYB103K50
	C8554	CKSRYB103K50
	C8010, C8202, C8207, C8213, C8215	CKSRYB104K16
	C8407, C8420, C8422, C8504, C8513	CKSRYB104K16
	C8521, C8523, C8525, C8527, C8529	CKSRYB104K16
	C8531, C8533, C8535, C8537, C8538	CKSRYB104K16
	C8540, C8542, C8544, C8550, C8702	CKSRYB104K16
	C8705, C8901, C8903	CKSRYB104K16
	C8110, C8516	CKSRYB105K6R3
	C8514	CKSRYB333K16
	C8203	CKSRYB473K50

RESISTORS

	R8506	RAB4C101J
	R8201	RS1/16S1802F
	Other Resistors	RS1/16S###J

OTHERS

	X8501 (20MHz)	VSS1171
	X8201 (24.576MHz)	XSS3003
	CN8003 13P Socket	AKP7070
	CN8007, CN8011 19P Socket	AKP7073
	JA8103 1P Pin Jack	VKB1159

D AF ASSY

SEMICONDUCTORS

	IC3181	BD3814FV
	IC3003, IC3101, IC3131, IC3161, IC3201	HA17558AF
	IC3241, IC3252, IC3261, IC3731	HA17558AF
	IC3901	NJM4565M
⚠	IC82	NJM7805FA
⚠	IC61	NJM7812FA
	IC5501	PDC113A
	IC3001	TC4052BFN
	IC3121	TC4066BFN
	Q5576, Q5577	2SA1037K
	Q3906	2SA1576A
⚠	Q32	2SB1565
	Q131, Q3005, Q3006, Q3009, Q3010	2SC4081
	Q3601, Q3602, Q3611, Q3612	2SC4081
	Q3621, Q3622, Q3631, Q3637, Q3638	2SC4081
	Q3642, Q3644, Q5501, Q5572	2SC4081
	Q3641	2SD1858X
⚠	Q5711	2SD1858X

Mark	No.	Description	Part No.
	Q114, Q3001, Q3002, Q3901-Q3904		2SD2114K
	Q115, Q3003, Q3004, Q3007, Q3061		DTA124EUA
	Q3121, Q3122, Q3124, Q3635, Q3639		DTA124EUA
	Q3645		DTA143EUA
	Q3123, Q3125, Q3636, Q3640, Q5575		DTC124EUA
	Q5578, Q5579		DTC124EUA
	Q5571, Q5573		DTC143EUA
	Q3633		RN1901
	Q5595		RN2901
	Q3632		UMB1N
	Q3741		XP4506
	D35, D3632-D3634		1SS133
⚠	D22		D5SBA20F20
	D3635		DAN202K
	D3644		DAN217
	D3603, D3613, D3623, D3901		DAP202K
	D103, D3601, D3602, D3604		MA111
	D3611, D3612, D3621, D3622		MA111
	D3636, D3637, D3641-D3643, D5556		MA111
	D5559, D5570, D5571, D5573, D5575		MA111
	D5712		MA111
	D33, D34		MTZJ16A
	D3631		MTZJ5.1A
	D36		MTZJ6.8B
	D83		MTZJ7.5C
⚠	D31, D32		S5688G
	D5711		UDZS10B
	D3003, D3004		UDZS6.2B
	D3181, D3182		UDZS6.8B
⚠	TH131		NCP18WF104J03RB

COILS AND FILTERS

L3361, L3362, L3461, L3462, L3561		ATH-059
L3661	AF Choke Coil	ATH-059
L8882	Power Inductor	ATH7012
L5571		LAU220J
L8881	Chip Beads	VTL1075

SWITCHES AND RELAYS

RY3641-RY3643	ASR7017

CAPACITORS

C5575 (0.047F/5.5V)	ACH1246
C23, C24 (5600uF/35V)	ACH7181
C15, C16 (2200uF/63V)	ACH7182
C25 (6800uF/25V)	ACH7183
C3191-C3193, C3913, C3914	CCSRCH101J50
C5510, C5511, C5577, C5722, C5723	CCSRCH101J50
C3001-C3008	CCSRCH221J50
C3103, C3104	CCSRCH331J50
C3294, C3909, C3910	CCSRCH470J50
C3109, C3110	CCSRCH680J50
C3009, C3010, C3105, C3106	CCSRCH821J50
C3139, C3140, C3169	CCSRCH821J50
C3029, C3030, C3035, C3036, C5576	CEAL100M16
C5572	CEAL101M6R3
C5578	CEAL1R0M50
C3919, C3920	CEANP470M16
C3037, C3038, C3101, C3102	CEAT100M50
C3115-C3118, C3131, C3132	CEAT100M50
C3143-C3146, C3161, C3162	CEAT100M50
C3171-C3174, C3213, C3214, C3262	CEAT100M50
C35, C3633, C3701, C3702	CEAT100M50
C3733, C3734, C3906, C3917, C3918	CEAT100M50
C5711	CEAT100M50
C34, C67, C84	CEAT220M50
C3195, C3196	CEAT221M10
C32	CEAT221M63
C8885	CEAT222M10
C3631	CEAT2R2M2A
C33	CEAT330M50
C3027, C3028, C3111, C3112	CEAT470M16
C3211, C3212, C3911, C3912	CEAT470M16
C3632	CEAT471M6R3
C5595, C5596	CEJQ220M50
C5504	CKSRYB102K50
C3025, C3026, C3033, C3034	CKSRYB103K50
C3113, C3114, C3141, C3142	CKSRYB103K50
C3175, C3176, C3197, C3198	CKSRYB103K50
C3209, C3210, C3249, C3250	CKSRYB103K50
C3295-C3298, C3735, C3736	CKSRYB103K50
C5506-C5508, C5518, C5571, C5573	CKSRYB103K50
C5580, C5791	CKSRYB103K50
C3014-C3016, C3185-C3188, C3288	CKSRYB104K16
C3290, C5513-C5516, C5574	CKSRYB104K16
C5794	CKSRYB105K10
C3217, C3218	CKSRYB123K50
C3133-C3136, C3163, C3165	CKSRYB152K50
C3251, C3252, C3261	CKSRYB153K50
C3276	CKSRYB222K50
C3361-C3364, C3461-C3464, C3561	CKSRYB223K50
C3563, C3661, C3663	CKSRYB223K50
C3243, C3244, C3263	CKSRYB272K50
C3266, C3282, C3292	CKSRYB273K16
C3270	CKSRYB333K16
C3268	CKSRYB334K10
C3247, C3248	CKSRYB393K16
C3269	CKSRYB393K25
C3189, C3190	CKSRYB472K50
C3284, C3286, C3365-C3368	CKSRYB473K50
C3465-C3468, C3565, C3567, C3665	CKSRYB473K50
C3667, C66, C83	CKSRYB473K50
C3170	CKSRYB682K50
C3245, C3246, C3265	CKSRYB683K16
C3219, C3220	CKSRYB823K25

RESISTORS

R3607, R3608, R3617, R3618	ACN7112
R3627, R3628 (0.1 /2W)	ACN7112
R3199, R3200	RD1/2PM151J
R3361, R3362, R3461, R3462, R3561	RD1/2PMF101J
R3661	RD1/2PMF101J
R31	RD1/2PMF332J
R36, R37	RD1/4PU101J
R3907, R3908, R3911, R3912	RD1/4PU330J
R3635	RD1/4PU332J
R3631, R3632	RD1/4PU333J
R35	RD1/4PU472J
R5489	RD1/4PU473J
R131	RS1/16S5600F
R132	RS1/16S6800F
Other Resistors	RS1/16S###J

Mark	No.	Description	Part No.

OTHERS

	X5501 (10MHz)	ASS7034
	CN5701 11P FFC Connector	52045-1145
	CN5103 21P FFC Connector	52045-2145
	CN5711 27P FFC Connector	52045-2745
	CN52 4P Jumper Connector	52147-0410
	3001 6P Pin Jack	AKB7012
	CN3301 12P Speaker Terminal	AKE7097
	CN3031, CN3032, CN5602, CN5603 23P Plug	AKP7064
	CN11 10P-VH Connector	B10P-VH
	J21 Connector Ass'y	PF04NN-S22
	J12 Connector Ass'y	PF05NN-S22
	PCB Binder	VEF1040
	CN5102 18P FFC Connector	VKN1249
	CN5101 B to B Conector 30P	VKN1627

T DVD TRADE ASSY(XWZ3858)

COILS AND FILTERS

	L8891 CHIP BEAD	VTL1075

RESISTORS

	All Resistors	RS1/16S###J

OTHERS

	CN5108 KR CONNECTOR	S4B-PH-K
	CN5107 B TO B CONNECTOR 30P	VKN1627
	CN5106 FJ CONNECTOR	VKN1775

C 6CH AMP ASSY

SEMICONDUCTORS

⚠	IC81	NJM7805FA
⚠	IC71	NJM7912FA
⚠	IC3301,IC3401	STK402-270
	Q3382,Q43	2SA1576A
	Q62	2SB1237X
	Q111,Q3381,Q63,Q92	2SC4081
⚠	Q61	2SD2012
	Q3301,Q3302,Q3401,Q3402	2SD2114K
	Q3501,Q3502,Q3504	2SD2114K
	Q3654	2SD2144S
	Q107,Q3653	DTA124EUA
	Q3652	DTA124TK
	Q106	DTC124EUA
⚠	Q3383,Q91	IRFI9Z34G
⚠	Q3384	IRFIZ34G
	Q3651	RN1901
	Q101,Q103	UMB1N
	Q102,Q104	UMH1N
⚠	D3321-D3326	1SR139-400
	D3327,D3328	1SR139-400
⚠	D3421-D3426	1SR139-400
	D3427,D3428	1SR139-400
	D3387,D3388,D3651-D3655	1SS133
	D101,D102,D104,D3657,D42	1SS355
⚠	D3391,D3392	30PDA20-FC6
⚠	D3381,D3382,D3481,D3482	DAN217
⚠	D3581,D3582	DAN217
	D3389,D3390	MTZJ10C
⚠	D98	MTZJ11B
⚠	D72	MTZJ15C
	D3393,D3394	MTZJ18B/C
⚠	D63	MTZJ18C
	D3385,D3386	MTZJ36A
⚠	D82	MTZJ7.5C
	D91	UDZS18B
	D105,D106,D3658	UDZS7.5B
	TH111	NCP18WF104J03RB

CAPACITORS

	C3305,C3306,C3405,C3406	CCSRCH221J50
	C3505,C3506,C62,C97	CCSRCH221J50
	C3309,C3310,C3409,C3410	CCSRCJ3R0C50
	C3509,C3510	CCSRCJ3R0C50
	C3307,C3308,C3407,C3408,C3508	CEAL100M16
	C3507	CEAL470M6R3
	C72	CEAT100M50
	C3651	CEAT101M25
	C101,C102	CEAT1R0M50
	C3323,C3324,C3423,C3424	CEAT221M50
	C3167,C3168,C3178,C3179	CEAT2R2M50
	C3301,C3302,C3317,C3318	CEAT2R2M50
	C3401,C3402,C3501,C3502	CEAT2R2M50
	C3652,C63,C82,C98	CEAT470M25
	C3653	CEAT470M35
	C3303,C3304,C3403,C3404	CKSRYB102K50
	C3503,C3504	CKSRYB102K50
	C92	CKSRYB104K16
	C71,C81	CKSRYB473K50

RESISTORS

	R3317-R3320,R3417-R3420	ACN7122
	R3517-R3520	ACN7122
⚠	R3327,R3328,R3427,R3428	RD1/4MUF470J
	R3387,R3388	RD1/4PU101J
	R3657	RD1/4PU330J
	R96,R97	RS1/16S1002F
⚠	R3323,R3324,R3351,R3423,R3424	RS1/16S1R0J
⚠	R3451	RS1/16S1R0J
	R67,R68	RS1/16S2201F
	R94,R95	RS1/16S2701F
⚠	R62	RS1/16S330J
	R65	RS1/16S4700F
	R47,R48	RS1/16S4701F
	Other Resistors	RS1/16S###J

OTHERS

	CN3001,CN3002 23P PLUG	AKP7064
	CN3651 PLUG (2P)	KM200SA2

E DIODE L ASSY (XWZ3840)

SEMICONDUCTORS

⚠	D21	D5SBA20(B)

E DIODE L ASSY (XWZ3841)

SEMICONDUCTORS

⚠	D21	D5SBA20(B)
	C21	CQMA103K2E

Mark	No.	Description	Part No.
F DIODE S ASSY			
SEMICONDUCTORS			
⚠	D11		D3SBA20(B)
G SSIB ASSY			
OTHERS			
	CN2	4P FFC Connector	VKN1264
	CN1	12P FFC Connector	VKN1272
	CN3	17P FFC Connector	VKN1277
H TRSB ASSY			
RESISTORS			
	Other Resistors		RS1/10S###J
OTHERS			
	CN12	7P FFC Connector	VKN1267
	CN11	8P FFC Connector	VKN1268
	Reaf Switch		VSK1011
I SSRB ASSY			
SEMICONDUCTORS			
	Q21		2SC2412K
	Q22		DTC124EK
	PC21		GP2S28
	PC22		RPI-574
CAPACITORS			
	C21		CKSQYB102K50
RESISTORS			
	Other Resistors		RS1/10S###J
OTHERS			
	CN21	7P FFC Connector	VKN1267
	Reaf Switch		VSK1011
J LOMB ASSY			
CAPACITORS			
	C31		CKSQYB102K50
OTHERS			
	CN31	KR Connector	B2B-PH-K
K PRIMARY ASSY (XWZ3844)			
SEMICONDUCTORS			
⚠	IC51		NJM78M56FA
	Q52		2SC4081
	Q51		2SD1858X
	D53		DAN217
⚠	D51		DF06SA
	D52		MA111
	D55		UDZS20B
COILS AND FILTERS			
⚠	L1	Line Filter	XTF3004
TRANSFORMERS			
⚠	T2		ATT7079
SWITCHES AND RELAYS			
⚠	RY1		XSR3008
CAPACITORS			
⚠	C1, C2 (0.022uF/AC275V)		ACE7022
	C52		CEAT102M25
	C54		CEAT470M16
	C53		CKSRYB103K50
	C56- C58		CKSRYB473K50
RESISTORS			
⚠	R1 (2.2M, 1/2W)		RCN1080
	Other Resistors		RS1/16S###J
OTHERS			
	4P Cable Holder		51048-0400
	H1, H2	Fuse Clip	AKR7001
⚠	CN1	2P-VH Connector	B2P3-VH
	J52	Jumper Wire	D20PYY0420E
	KN1	Wrapping Terminal	VNF1084
⚠	AN1	1P AC Inlet	XKP3042
K PRIMARY ASSY (XWZ3845)			
SEMICONDUCTORS			
⚠	IC51		NJM78M56FA
	Q52		2SC4081
	Q51		2SD1858X
	D53		DAN217
⚠	D51		DF06SA
	D52		MA111
	D55		UDZS20B
COILS AND FILTERS			
⚠	L1	Line Filter	XTF3004
TRANSFORMERS			
⚠	T2		ATT7080
SWITCHES AND RELAYS			
⚠	RY1		XSR3008
⚠	S101,S102	Voltage Selector	AKX7017
CAPACITORS			
⚠	C1, C2 (0.022uF/AC275V)		ACE7022
	C52		CEAT102M25
	C54		CEAT470M16
	C53		CKSRYB103K50
	C56- C58		CKSRYB473K50
RESISTORS			
	Other Resistors		RS1/16S###J
OTHERS			
	4P Cable Holder		51048-0400
	H1, H2	Fuse Clip	AKR7001
⚠	CN1	2P-VH Connector	B2P3-VH
	J52	Jumper Wire	D20PYY0420E
	KN1	Wrapping Terminal	VNF1084
⚠	AN1	1P AC Inlet	XKP3041
⚠	CN02	5P-VH Connector	B5P9-VH

Mark No.	Description	Part No.

L DISPLAY ASSY

SEMICONDUCTORS

	IC5651	BU2090F
	IC5601	PT6302LQ-003
	Q5691	2SC4081
	D5651-D5657	MPG5064X

COILS AND FILTERS

	L5563	LFEA100J
	L5562	LFEA220J

CAPACITORS

	C5642, C5643	CCSRCH101J50
	C5674	CCSRCH470J50
	C5564	CEJQ101M6R3
	C5679, C5680	CEJQ1R0M50
	C5678	CEJQ220M35
	C5953	CEJQ470M16
	C5671-C5673, C5676	CKSRYB102K50
	C5677	CKSRYB103K50
	C5651	CKSRYB104K16
	C5562, C5563, C5665, C5666, C5675	CKSRYB223K50
	C5952	CKSRYB223K50

RESISTORS

	Other Resistors	RS1/16S###J

OTHERS

	CN5721 27P FFC Connector	52045-2745
	CN5803 13P Jumper Connector	52147-1310
	5671 FL Spacer	AEB7069
	5951 Remote Receiver Unit	GP1UM27XK
	V5601 FL Tube	XAV3020

M AMP TRADE ASSY

SEMICONDUCTORS

	⚠IC25	AEK7047

RESISTORS

	Other Resistors	RS1/16S###J

OTHERS

	CN3011, CN3012, CN3021, CN3022 23P Socket (24.576MHz)	AKP7075

N DSP TRADE ASSY

RESISTORS

	All Resistors	RS1/16S###J

OTHERS

	CN5621 13P PLUG	AKP7059
	CN5622,CN5623 19P PLUG	AKP7062
	CN5612,CN5613 23P SOCKET	AKP7075

O VIDEO JACK ASSY

COILS AND FILTERS

	L8861,L8871 CHIP BEAD	VTL1089

CAPACITORS

	C8822,C8832,C8842,C8852,C8862	CCSRCH470J50
	C8872	CCSRCH470J50
	C8821,C8831,C8851	CEAT102M6R3
	C8861,C8871	CEAT471M6R3

RESISTORS

	R8821,R8831,R8841,R8853,R8863	RS1/16S75R0F
	R8873	RS1/16S75R0F

OTHERS

	CN8001 17P CONNECTOR	52044-1745
	JA8851 JACK	VKB1150
	JA8802 JACK	VKB1178
	CN8003 7P CONNECTOR	VKN1267

P FUNCTION KEY ASSY

SWITCHES AND RELAYS

	S5846, S5847, S5851-S5858	VSG1010

RESISTORS

Other ResistorsRS1/16S###J

OTHERS

	3P Cable Holder	51048-0300
	4P Cable Holder	51048-0400
	J5805 Jumper Wire	D20PYY0405E

Q DISC KEY ASSY

SWITCHES AND RELAYS

	S5841-S5845	VSG1010

RESISTORS

	Other Resistors	RS1/16S###J

OTHERS

	4P Cable Holder	51048-0400
	5P Cable Holder	51048-0500
	J5803 Jumper Wire	D20PYY0510E

R HP MIC ASSY (XWZ3852)

SWITCHES AND RELAYS

	S5831	VSG1024

CAPACITORS

	C3906	CKSRYB103K50
	C3905, C3907	CKSRYB104K16
	C3903, C3904	CKSRYB223K50

RESISTORS

	Other Resistors	RS1/16S###J

OTHERS

	5P Cable Holder	51048-0500
	13P Cable Holder	51048-1300
	JA3901 Mini Jack	AKN7005
	J5801 Jumper Wire	D20PYY1310E

R HP MIC ASSY (XWZ3853)

SEMICONDUCTOR

	IC5801	BA4558F

SWITCHES AND RELAYS

Mark No.	Description	Part No.
S5831		ASG7013

CAPACITORS

C3906		CKSRYB103K50
C3905,C3907,C5811		CKSRYB104K16
C3903,C3904		CKSRYB223K50
C5801,C5807		CCSRCH101J50
C5802,C5808,C5806		CEAL100M16
C5804,C5810		CKSRYB473K50
C5805		CCSRCH471J50
C5809		CCSRCH681J50
C5816		CKSRYB333K25

RESISTORS

VR5801		XCS3007
All Resistors		RS1/16S###J

OTHERS

0	5P CABLE HOLDER	51048-0500
0	13P CABLE HOLDER	51048-1300
JA3901	MINI TURE JACK	AKN7005
J5801	JUMPER WIRE 13P	D20PYY1315E
JA5801	STEREO MINI JACK	AKN7005

SJOG ASSY

SWITCHES AND RELAYS

S5861		XSX3007

CAPACITORS

C5861		CKSRYB102K50
C5862		CKSRYB104K16

RESISTORS

Other Resistors		RS1/16S###J

OTHERS

3P Cable Holder		51048-0300
J5811	Jumper Wire	D20PYY0310E

6. ADJUSTMENT

6.1 ADJUSTMENT ITEMS AND LOCATION

■ Adjustment Items

[Mechanism Part]

❶ Tangential and Radial Height Coarse Adjustment

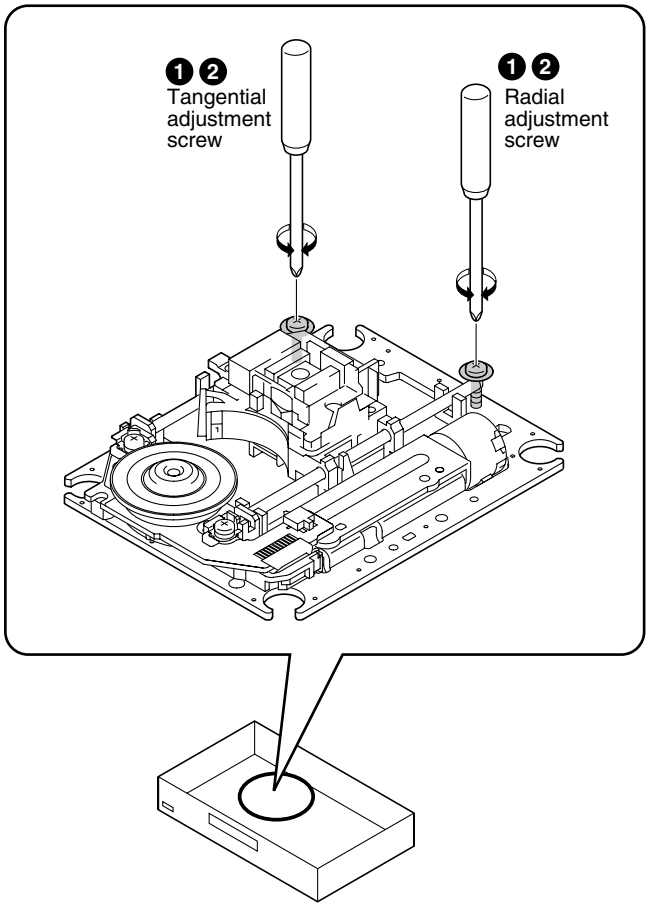
❷ DVD Jitter Adjustment

[Electrical Part]

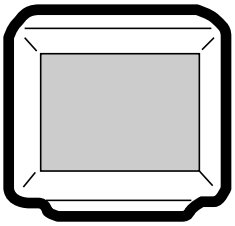
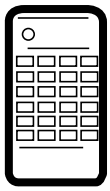
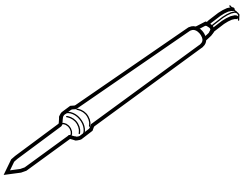
Electrical adjustments are not required.

■ Adjustment Points (Mechanism Part)

Cautions: After adjustment, adjustment screw locks with the Screw tight.



6.2 JIGS AND MEASURING INSTRUMENTS

⊕ Screwdriver (large)	⊕ Screwdriver (medium)	 TV monitor	 Test mode remote control unit (GGF1381)
⊕ Precise screwdriver	DVD test disc (GGV1025)	 Soldering iron	Screw tight (GYL1001)

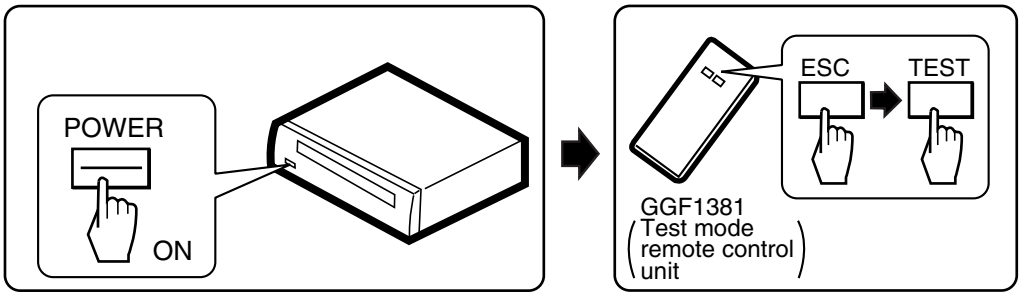
6.3 NECESSARY ADJUSTMENT POINTS

When	Adjustment Points	
■ Exchange Parts of Mechanism Assy		
Exchange the Pickup	Mechanical point	❶, ❷ ＊ After adjustment, screw locks with the Screw tight.
	Electric point	———
Exchange the Traverse Mechanism	Mechanical point	———
	Electric point	———
Exchange the Spindle Motor	Mechanical point	❷ ＊ After adjustment, screw locks with the Screw tight.
	Electric point	———
■ Exchange PCB Assy		
Exchange PC Board LOMB and DVDM ASSY	Mechanical point	———
	Electric point	———

6.4 TEST MODE

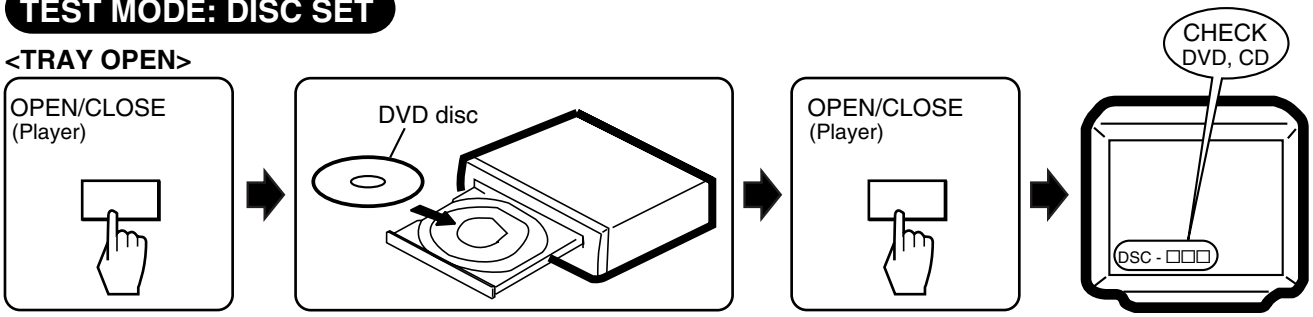
• The TEST MODE functions that are used only during adjustment are described here. For details, see "7.1.1 TEST MODE".

TEST MODE: ON



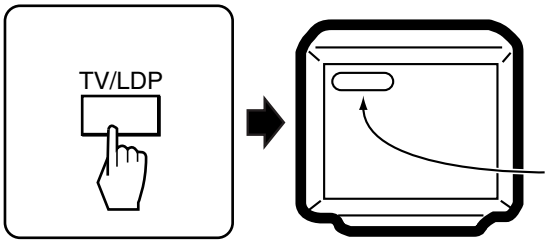
TEST MODE: DISC SET

<TRAY OPEN>



TEST MODE: PLAY

<PLAY>

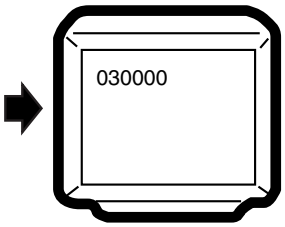


CAUTION:
Perform only trace, video and audio outputs are nothing.

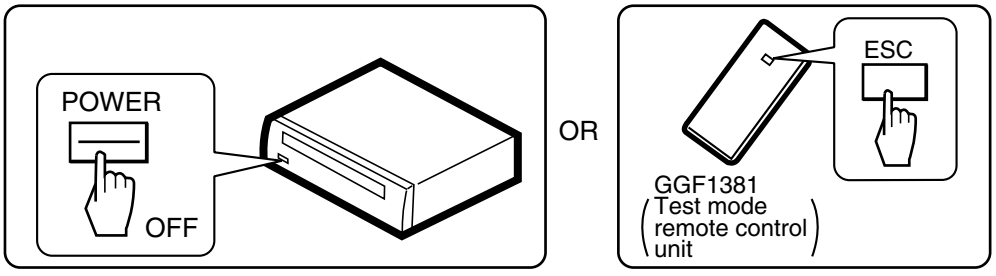
< When playback with the target address of disc (DVD)>

For example, when playback with # 30000

During PLAY [+10] ➡ [3] ➡ [0] ➡ [0] ➡ [0] ➡ [0] ➡ [CHP/TIM] Press keys in order



TEST MODE: OFF

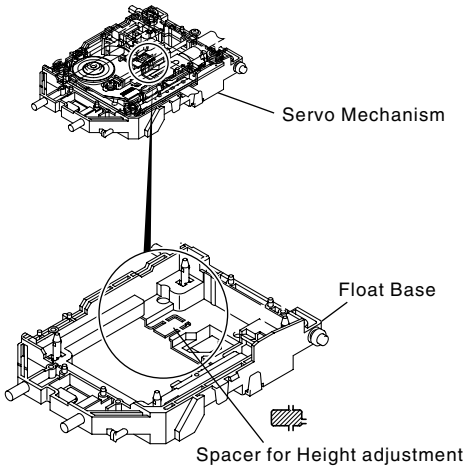


6.5 MECHANISM ADJUSTMENT

1 Tangential and Radial Height Coarse Adjustment

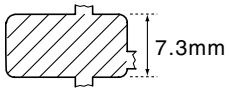
START

- Remove the servo mechanism.
- Remove a Spacer for height adjustment attached to the back side (shaded area) of the Servo Mechanism (Float Base) with nippers.

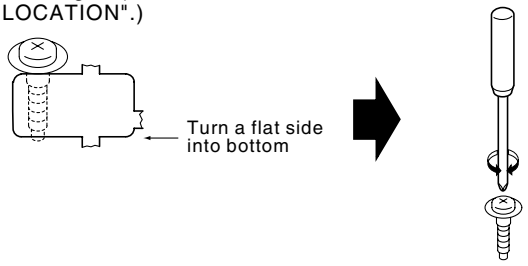


Note:
Turn the Short switch to Short side when removing the Pickup Flexible Cable.
(Refer to "7.1.13 DISASSEBLY".)

Cautions:
Because there is not a Spacer for height adjustment in adjustment after the second time, will keep it at need.
(This parts is Traverse mechanism exclusive use of a model for 2003 years)



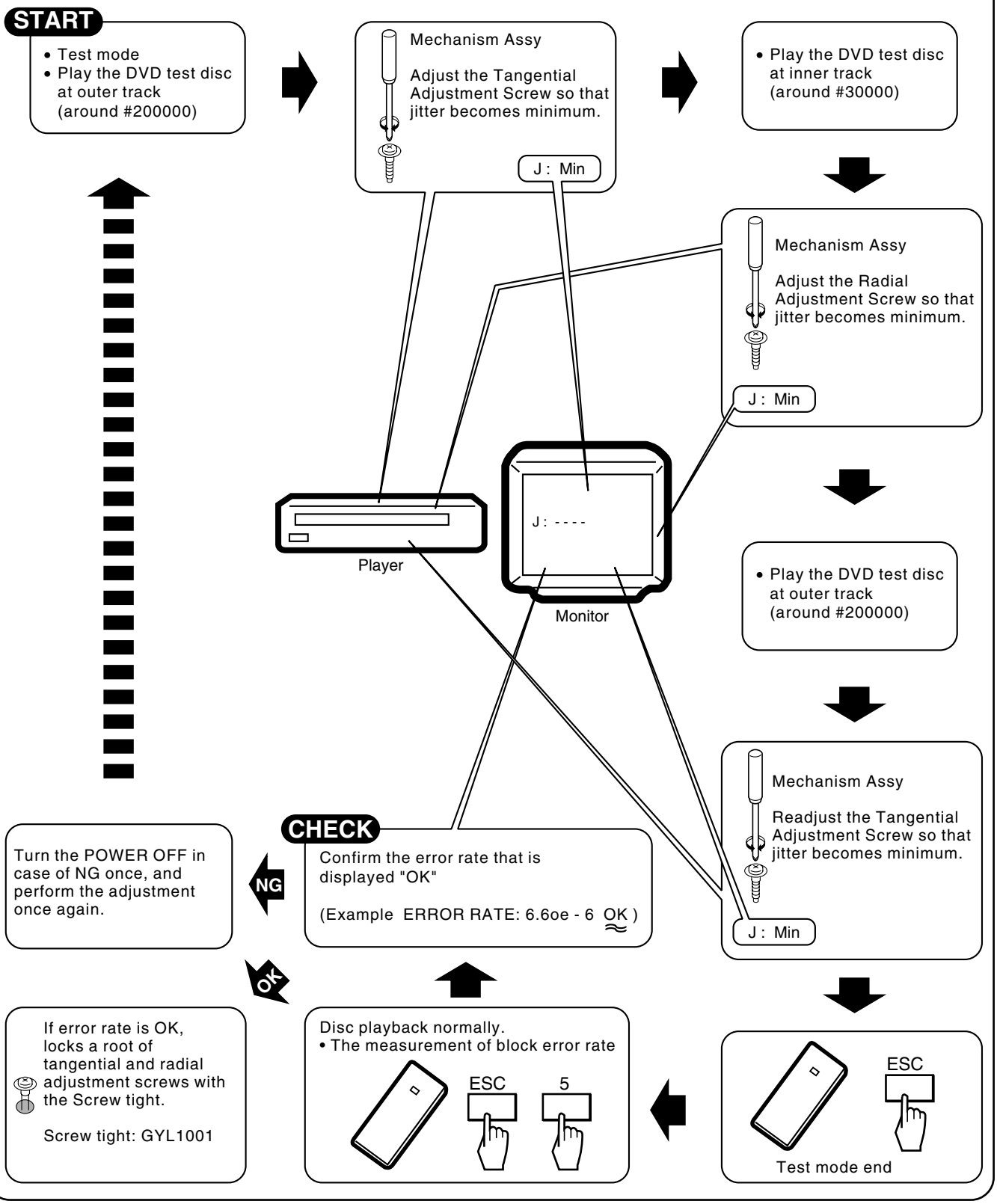
Put a spacer between a Tangential (or Radial) adjustment screw and Mechanism Base and turn each screw to adjust the height. (Refer to "6.2 ADJUSTMENT ITEMS AND LOCATION".)



2 DVD Jitter Adjustment

- Playback method of inner and outer address for the purpose is refererd to "6.4 TEST MODE".
- Jitter indication of the monitor is refererd to "7.1.2 DISPLAY SPECIFICATION OF THE TEST MODE".

Use disc: GGV1025


START
• Test mode
• Play the DVD test disc at outer track (around #200000)
Mechanism Assy
Adjust the Tangential Adjustment Screw so that jitter becomes minimum.
J : Min
• Play the DVD test disc at inner track (around #30000)
Mechanism Assy
Adjust the Radial Adjustment Screw so that jitter becomes minimum.
J : Min
J : ----
Player
Monitor
• Play the DVD test disc at outer track (around #200000)
Mechanism Assy
Readjust the Tangential Adjustment Screw so that jitter becomes minimum.
J : Min
CHECK
Confirm the error rate that is displayed "OK"
(Example ERROR RATE: 6.6oe - 6 OK)
NG
Turn the POWER OFF in case of NG once, and perform the adjustment once again.
OK
If error rate is OK, locks a root of tangential and radial adjustment screws with the Screw tight.
Screw tight: GYL1001
Disc playback normally.
• The measurement of block error rate
ESC
5
ESC
Test mode end

7. GENERAL INFORMATION

7.1 DIAGNOSIS

7.1.1 TEST MODE

■ Test Mode Functional Specification

① Test mode entry

In the power ON state, press the [ESC] (A8-5F) key and [TEST / RANDOM] (A8-5E) key in order of the Test mode remote control unit.

- Light all FL and LEDs, and turns off the FL and LEDs when pressing any key.
- OSD displays test mode. Refer to "7.1.2 DISPLAY SPECIFICATION OF THE TEST MODE".

② Release the Test mode

- Turn off the power.
- Press the [ESC] (A8-5F) key of the remote control unit and reset it.

③ Tray open / close

- Press the [REPEAT A-B] (A8 - 48) key of the remote control unit.
- Press the [OPEN / CLOSE] key of the main unit during the stop state.

④ Playback stop

1. Press the [REPEAT] (A8 - 44) key of remote control unit during playback state.
2. Press the [STOP] key of the remote control unit or main unit during playback state.
   (Playback stops, but the loaded disc keeps rotating.)

⑤ LD ON

DVD : Press the [TEST] (A8-5E) and [1] (A8-01) keys in order, and turn on the laser diode (650n).
CD : Press the [TEST] (A8-5E) and [4] (A8-04) keys in order, and turn on the laser diode (780n).

⑥ Focus on / sweep

1. Lock the focus by pressing the [TEST] (A8-5E) and [2] (A8-02) keys in order.
2. Repeat focus sweep by pressing the [TEST] (A8-5E) and [3] (A8-03) keys in order.

⑦ Spindle FG servo

CAV : Press the [TEST] (A8-5E) and [5] (A8-05) keys in order,then rise up the spindle and FG servo is turned on.
CLV : Press the [TEST] (A8-5E) and [9] (A8-09) keys in order,then rise up the spindle and FG servo is turned on.

⑧ Tracking open / close

1. Open tracking by pressing the [STEP FWD] (A8-54) key of remote control unit during play state.
2. Close tracking by pressing the [STEP REV] (A8-50) key of remote control unit during play state.

⑨ Slider servo on/off

1. Turn on the slider servo by pressing the [TEST] (A8-5E) and [CX] (A8-0E) keys in order.
2. Turn off the slider servo by pressing the [TEST] (A8-5E) and [TV/LDP] (A8-0F) keys in order.

⑩ Slider in / out

Slider in : In tracking off state, press the [SCAN REV] (A8-11) key of the remote control unit.
Slider out : In tracking off state, press the [SCAN FWD] (A8-10) key of the remote control unit.

⑪ Play (perform only ID search and trace to the specified location)

Press the [TV/LDP] (A8-0F) key of the remote control unit during stop state.
Only trace is performed, there are no video and audio outputs.

⑫ Screen display ON/OFF

1. Turn off the display by pressing the [AUDIO] (A8-1E) key of the remote control unit.
2. Turn on the display by pressing the [DISPLAY] (A8-43) key of the remote control unit.

⑬ Search

1. Search address input entry

• It enters to address input mode when pressing the [+10] (A8-1F) key. (Most significant digit of an address displays "<".)
• In this time, the last address is displayed as the initial state.

2. Search address input

• Press [0] to [9] (A8-00 to 09) keys of the remote control unit. In the DVD, set an address with hexadecimal.
• In the address input mode, turn to the hexadecimal input by pressing the [PROGRAM] (A8-4C) key (display a "∗" mark), and [1] to [6] keys are each input as A to F.
• Hexadecimal input and decimal input can switch with toggle.
• In case of CD, only the absolute time search is performed.

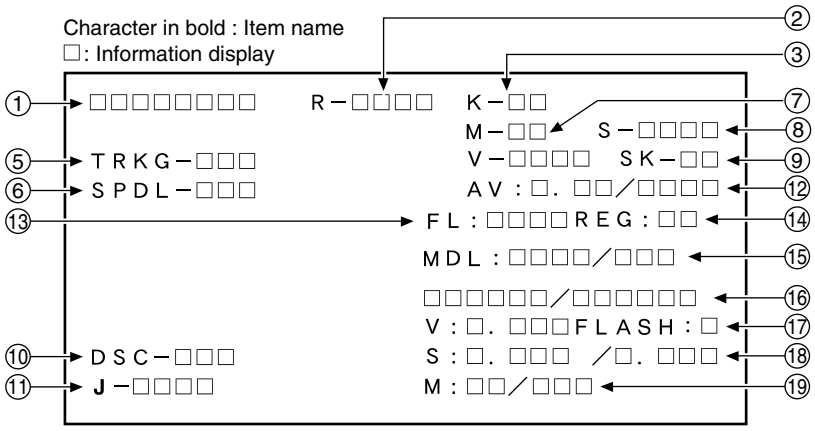
3. Search execution

• Press the [CHP/TM] (A8-13) key of the remote control unit.
• After the search, only trace is performed, there are no video and audio outputs.

4. Release the Search address input

• Clear the address by pressing the [CLEAR] (A8-45) key. Release from address input mode by pressing the [CLEAR] key once again.

7.1.2 DISPLAY SPECIFICATION OF THE TEST MODE



① **Address indication**
The address being traced is displayed in number.
(as for the DVD, indication of decimal number is possible.)
DVD : ID indication (hexadecimal number, 8 digits)
[∗ ∗ ∗ ∗ ∗ ∗ ∗ ∗]
CD : A-TIME (min. sec.) [0 0 0 0 ∗ ∗ ∗ ∗]

② **Code indication of remote control unit [R – ∗ ∗ ∗ ∗]**
In case of double code, display a 2nd code.

③ **Main unit keycode indication [K – ∗ ∗]**

⑤ **Tracking status [TRKG – ∗ ∗ ∗]**
Tracking on : [ON]
Tracking off : [OFF]

⑥ **Spindle status [SPDL – ∗ ∗ ∗]**
[OFF], [ACC/BRK], [CAV], [CLV]

⑦ **Mechanism (loading) position value [M – ∗ ∗]**
Unknown : [01] or [41]
Open state : [04]
Close state : [08]
During opening : [12]
During closing : [22]

⑧ **Slider position [S – ∗ ∗ ∗ ∗]**
In Side Switch ON : [01]
In Side Switch OFF : [00]

⑨ **Output video system [V – ∗ ∗ ∗ ∗]**
NTSC system : [NTSC]
PAL system : [PAL]
Automatic setting : [AUTO]

Scart terminal output [SK – ∗ ∗]
(Display only the WY model which can do the output setting of scart terminal.)
VIDEO : [00]
S-VIDEO : [01]
RGB : [02]

⑩ **Disc sensing [DSC – ∗ ∗ ∗]**
The type of discs loaded is displayed.
[DVD], [CD], [VCD], [ ]

⑪ **Jitter value [J – ∗ ∗ ∗ ∗]**

⑫ **Version of the AV-1 chip / version of firmware [AV: ∗ ∗ / ∗ ∗ ∗ ∗ ∗ ∗ ∗]**

⑬ **Version of the FL controller [FL: ∗ ∗ ∗ ∗]**

⑭ **Region setting of the player [REG: ∗]**
Setting value : [1] to [6]

⑮ **Destination setting of the FL controller [MDL: ∗ ∗ ∗ ∗ / ∗ ∗ ∗]**
Four characters in the front represent the type of model.
Three characters in the back represent the destination code.
J: /J, K: /KU, /KC, /KU/KC, R: /RL/RD, RAM : /RAM,
LB: /LB, WY: /WY

⑯ **Part number of the flash ROM and system controller [∗ ∗ ∗ ∗ ∗ ∗ / ∗ ∗ ∗ ∗ ∗ ∗]**

⑰ **Version of the flash ROM [V: ∗. ∗ ∗ ∗]**
Flash ROM size [FLASH = ∗ ∗]

⑱ **Revision of the system controller [S: ∗. ∗ ∗ ∗ / ∗. ∗ ∗ ∗]**
version . revision / build number of the ST core

⑲ **Revision of the DVD mechanism controller [M: ∗ ∗ / ∗ ∗ ∗]**
Kinds of version / firmware of the FE.
RAM or ROM

7.1.3 FUNCTIONAL SPECIFICAION OF THE SHORTCUT KEY

Only during normal playback, the following shortcut keys can be assigned by pressing a required key after pressing the ESC key of the remote control unit. To quit, press the ESC key

Command Contents	Conditions	Remote Control Key Name	Remote Control Code
Memory clear and resion / revision indication		CLEAR (∗1)	A8-45
Average value measurement of DVD error rate		5 (∗1)	A8-05
CD error rate measurement		5 (∗1)	A8-05
Aspect : Pan scan		2	AF-A2
Aspect : Letter box		3	AF-A3
Aspect : Wide		4	AF-A4
Digital : AC3		5	AF-A5
Digital : AC-3 > PCM		6	AF-A6
Virtual surround : OFF	Only for models having the corresponding functions	7	AF-A7
Virtual surround : TruSurround		8	AF-A8
Digital output ON		REPEAT A	AF-E8
Digital output OFF		REPEAT B	AF-E4
DTS Digital output ON		STEP FWD	AF-B7
DTS Digtal output OFF		STEP REV	AF-B8
Scart terminal output : VIDEO	WY, models equipped with Scart terminal	AUDIO	AF-BE
Scart terminal output : S-VIDEO		SUBTITLE	AF-36
Scart terminal output : RGB		ANGLE	AF-B5
Progressive OFF	Only for progressive models	R_SKIP	A3-9D
Progressive ON		F_SKIP	A3-9C
Audio 5.1 CH ON	Only for models having the corresponding functions	KD_ENTER	AF-EF
FL indication of EDC / ID error		CX (∗1)	A8-0E
FL indication of ID number		STEREO (∗1)	A8-4A
ZOOM ON (X4)		ZOOM	AF-37
ZOOM OFF		< X3 (∗1)	A8-59
Service mode indication (error rate indication, etc.)		CHP/TIM (∗1)	A8-13
Model information indication		CHAP (∗1)	A8-40
Background color change		+10 (∗1)	A8-1F
Audio last stage mute ON		9	AF-A9
Audio last stage mute OFF		0	AF-A0
Title search Input mode IN Title No. input Search execution		SIDE A (∗1) Numbers (∗1) PLAY (∗1)	A8-4D A8-00 to A8-09 A8-17
Region confimation mode		AUDIO (∗1) Numbers (∗1)	A8-1E A8-01 to A8-08

∗1 : Test mode remote control unit

• Service mode indication (ESC + CHP/TIM keys)
ID Address
The error rate is always displayed in exponential notation, e.g., ∗.∗ ∗ e - ∗, for both DVDs and CDs.
EDC/ID/AV 1 error history (ID Address, EDC/ID/AV 1 Error, last eight errors)
Self-diagnosis functions (If a mechanical error has occurred, the mechanical-error history is also displayed.)

• Calculation of the average error rate (ESC + "5" [Test mode remote control unit] keys)
The average of the last eight error rates is calculated and indicated in exponential notation. After the calculation is completed, "OK" or "NG" is displayed. If "NG" is displayed, the disc tray will open (for both DVDs and CDs)
For DVDs: OK with 5.0e-4 or less, for CDs: OK with 7.6e-3 or less

• Indication of model information (ESC + CHAP keys)
The items from 12 to 19 of the TEST MODE Indications are displayed. However, in the indications, S in the standard test mode is changed to B.E VERSION, and M is changed to F.E VERSION. For details, see 7.1.4.

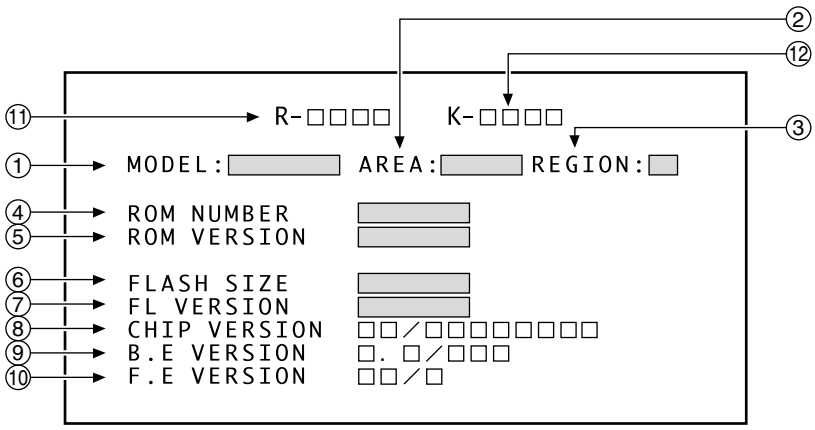
• Change of the background colors (ESC + "+10" [Test mode remote control unit] keys)
Every time the keys are pressed, the background color is changed between blue and green alternately.
(The green background is used in SETUP NAVIGATOR.)

• Region confirmation mode (ESC + AUDIO [Test mode remote control unit] + "1"-"8" [Test mode remote control unit] keys)
After you press the AUDIO key while holding the ESC key pressed and then input the region number, if the number is different from that set in the unit, an error message is displayed, and the tray opens.

7.1.4 SPECIFICAION OF MODEL INFORMATION DISPLAY

To display model information : Press the ESC key then the CHAP key.
To close the model information display : Press the ESC key.

• **Display contents**



Character in bold : Item name
□: Information display

① **Model name**
Display it according to model information set from the FL controller.
② **Destination indication**
Display it according to model information set from the FL controller.
③ **Region No.**
④ **Part number**
⑤ **ROM version**
⑥ **Flash size**
⑦ **FL controller version**

⑧ **CHIP VERSION**
Version of ST CHIP
CUT ID / JTAG ID
(two columns) (eight columns)
⑨ **B.E VERSION**
Version of BACK END (version of ST core software)
□.□ /□□□
softwareVersion . softwareRevision / buildNumber
⑩ **F.E VERSION**
Version of FRONT END (version of mechanism controller CHIP software)
□□/ □
MainVersion / Kinds of firmware RAM or ROM
⑪ **Remote control code**
⑫ **Key code of Main unit**

7.1.5 FUNCTIONAL SPECIFICAION OF THE SERVICE MODE

• EDC / ID error FL display (shortcut function)

EDC/ID error is displayed on the FL display if you press the CX key while holding the ESC key on the TEST MODE remote control unit pressed. To quit while an EDC/ID error is displayed, press the ESC key.

FL display

00 /00 / 01 ＊

＊: Lights when an AV1 error was generated at least once.

Number of sites where an EDC or ID error was generated

Number of retrials while an ID error is being generated
(only displayed at the moment when an error is being generated),
and for the ST models, the number of retrials made for the latest ID error

Number of retrials while an EDC error is being generated
(only displayed at the moment when an error is being generated),
and the number of retrials made for the latest EDC error

• Display during Service Mode

To enter Service Mode, press the CHP/TIM key while holding the ESC key pressed.
To quit, press the ESC key.

Service mode display

① ID Address

② Error rate (always displayed), in exponential notation

＊＊ (＊＊＊＊)

Number of error rates

02: Indicates use of the same method as for the 02 models,
No indication: Indicates use of the method used for models before the 02 model

③ EDC/ID/AV1 error history (ID Address, EDC/ID/AV1 errors, last eight errors)

Description of AV1 errors
BIT0: In BE code, an EDC error, FEC I/F buffer overflow, or "not valid" is generated (B.E error)
BIT1: In BE code, the ID is different from that of the target (B.E error)
BIT2: An error was generated in FE-added 2-byte EDC data. (F.E error)

④ Self-diagnosis functions

Whether F.E is normal or not is checked.

FE OK: No abnormality in F.E

FE Error: Abnormality is recognized in F.E.
Pressing the CHP/TIM key again displays the mechanical error history. Each press of the CHP/TIM key changes the displays between the mechanical error history and the Service Mode display.
For details on the mechanical error history, refer to the addendum.

Indication plan contents

AV1 ERR	BIT 2	1	0
00	0	0	0
01	0	0	1
02	0	1	0
03	0	1	1
04	1	0	0
05	1	0	1
06	1	1	0
07	1	1	1

Character in bold : Item name
□: Information display

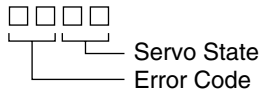
7.1.6 MECHANICAL ERROR HISTORY

■ Mechanical Error History

Only if a mechanical error (FE error) has been generated, a mechanical error history containing up to the last eight errors is displayed if you press the CHP/TIM key in Service Mode.
Errors are displayed in descending order, with the latest one at the top.

Description of the mechanical error history

① Error number
The first two digits are for the error code, and the second two digits are for the servo state.

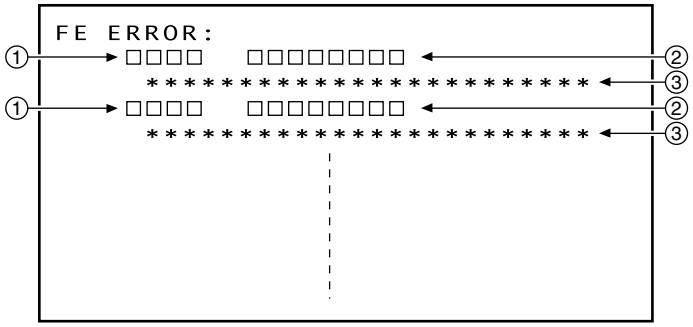


② Error number
The elapsed time from the time when the system was turned on until an error was generated is displayed.
Note: If a later error time is shorter than the previous error time, it means that the unit was turned off then on again.

③ Description of errors
Error messages are displayed.
Example: If the error code is 0x13 (Focus lost timeout) and the servo state is 0x05 (Disc judge), the message becomes "Focus lost timeout in Disc judge."

Note: When an error has been generated, if the servo state is "Disc judge," the disc tray opens, and if the servo state is other than "Disc judge," the unit stops (excluding a case of a device error with the error code 0xd∗).

Indication contents



• List of the error codes

FOCUS ERROR	0x0∗	**FOCUS TIMEOUT**	0x1∗
Focus on error	0x01	Focus on timeout	0x11
Focus off error	0x02	Focus off timeout	0x12
Focus lost error	0x03	Focus lost timeout	0x13
Focus balance adjust error	0x04	Focus balance adjust timeout	0x14
Focus gain adjust error	0x05	Focus gain adjust timeout	0x15
Focus sweep error	0x06	Focus sweep timeout	0x16
Focus reflection error	0x07	Focus reflection timeout	0x17
TRACKING ERROR	0x2∗	**TRACKING TIMEOUT**	0x3∗
Tracking on error	0x21	Tracking on timeout	0x31
Tracking off error	0x22	Tracking off timeout	0x32
Tracking lost error	0x23	Tracking lost timeout	0x33
Tracking balance adjust error	0x24	Tracking balance adjust timeout	0x34
Tracking gain adjust error	0x25	Tracking gain adjust timeout	0x35
STEPPING ERROR	0x4∗	**STEPPING TIMEOUT**	0x5∗
Stepping on error	0x41	Stepping on timeout	0x51
Stepping off error	0x42	Stepping off timeout	0x52
Stepping lost error	0x43	Stepping lost timeout	0x53
Stepping move error	0x44	Stepping move timeout	0x54
SPINDLE ERROR	0x6∗	**SPINDLE TIMEOUT**	0x7∗
Spindle on error	0x61	Spindle on timeout	0x71
Spindle off error	0x62	Spindle off timeout	0x72
Spindle lost error	0x63	Spindle lost timeout	0x73
Spindle CAV error	0x64	Spindle CAV timeout	0x74
Spindle CLV error	0x65	Spindle CLV timeout	0x75
ACQUISITION ERROR	0x8∗	**ACQUISITION TIMEOUT**	0x9∗
PLL lost error	0x83	PLL lost timeout	0x93
DECODER ERROR	0xa∗	**DECODER TIMEOUT**	0xb∗
ID lost error	0xa3	ID lost timeout	0xb3
DEVICE ERROR	0xd∗		
SRAM error	0xd1		

• List of the servo states

0x00	Reset
0x01	Stop (inside position)
0x02	Stop (any position)
0x03	Braking for stop
0x04	New disc
0x05	Disc judge
0x06	Reserved 1
0x07	Playing
0x08	Start up
0x09	Seeking
0x0A	Pausing
0x0B	Reading BCA
0x0C	Reserved 2
0x0D	
0x0E	Tray open
0x0F	Tray moving

Note : 0 x □ □
code
(Only this part is displayed to a display)

Error Code Table

Error Name	No.	Causes	Check Item	Possibility of Trouble	Remarks
FOCUS ERROR (0 x 0*)					
Focus on error	0 x 01	Focus on could not be completed	Are not there a dirt or a scratch in the Disc? Does LD become weak? Does the lens move up and down?	1. Pickup 2. Driver 3. Front End IC	
Focus off error	0 x 02	Focus off could not be completed	Unknown		
Focus lost error	0 x 03	Focus servo is lost	Are not there a dirt or a scratch in the Disc? Does LD become weak?	1. Pickup	
Focus balance adjust error	0 x 04	AFB on could not be completed			
Focus gain adjust error	0 x 05	Focus AGC could not be completed			
Focus sweep error	0 x 06				
Focus reflection error	0 x 07	Dimensions of S curve did not reach to the aim value	Does LD become weak?	1. Pickup	
FOCUS TIMEOUT (0 x 1*)					
Focus on timeout	0 x 11	Did timeout at focus on	Are not there a dirt or a scratch in the Disc? Does LD become weak? Does the lens move up and down?	1. Pickup 2. Driver 3. Front End IC	
Focus off timeout	0 x 12	Did timeout at focus off			
Focus lost timeout	0 x 13	Did timeout at focus backup			
Focus balance adjust timeout	0 x 14	Did timeout at AFB			
Focus gain adjust timeout	0 x 15	Did timeout at AGC			
Focus sweep timeout	0 x 16				
TRACKING ERROR (0 x 2*)					
Tracking on error	0 x 21	Tracking on could not be completed		1. Pickup 2. Driver 3. Front End IC	
Tracking off error	0 x 22	Tracking off could not be completed			
Tracking lost error	0 x 23	Tracking servo is lost		1. Pickup	
Tracking balance adjust error	0 x 24	ATB could not be completed		1. Pickup	
Tracking gain adjust error	0 x 25	AGC could not be completed		1. Pickup	
Tracking jump error	0 x 26	Tracking jump could not be completed			
TRACKING TIMEOUT (0 x 3*)					
Tracking on timeout	0 x 31	Did timeout at tracking on	Are not there a dirt or a scratch in the Disc?	1. Pickup 2. Driver 3. Front End IC	
Tracking off timeout	0 x 32	Did timeout at tracking off			
Tracking lost timeout	0 x 33	Did timeout at tracking backup	Are not there a dirt or a scratch in the Disc?	1. Pickup	
Tracking balance adjust timeout	0 x 34	Did timeout at ATB		1. Pickup	
Tracking gain adjust timeout	0 x 35	Did timeout at AGC		1. Pickup	
Tracking jump timeout	0 x 36	Did timeout at tracking jump			
STEPPING ERROR (0 x 4*)					
Stepping on error	0 x 41	Stepping on could not be completed		1. Pickup 2. Driver 3. Front End IC	
Stepping off error	0 x 42	Stepping off could not be completed			
Stepping lost error	0 x 43	Stepping servo is lost			
Stepping move error	0 x 44	Stepping could not move	Do move to inner and outer periphery of the stepping in the test mode? Do indicate "S-04" at the most inner periphery of the stepping?	1. Stepping motor 2. Inside switch 3. Driver	
STEPPING TIMEOUT (0 x 5*)					
Stepping on timeout	0 x 51	Did timeout at stepping on		1. Pickup 2. Driver 3. Front End IC	
Stepping off timeout	0 x 52	Did timeout at stepping off			
Stepping lost timeout	0 x 53	Did timeout at stepping backup			
Stepping move timeout	0 x 54	Did timeout at stepping movement	Do move to inner and outer periphery of the stepping in the test mode? Do indicate "S-04" at the most inner periphery of the stepping?	1. Stepping motor 2. Inside switch 3. Driver	

Error Name	No.	Causes	Check Item	Possibility of Trouble	Remarks
SPINDLE ERROR (0 x 6*)					
Spindle on error	0 x 61	Spindle on could not be completed			
Spindle off error	0 x 62	Spindle off could not be completed			
Spindle lost error	0 x 63	Spindle lost control			
Spindle CAV error	0 x 64	CAV on could not be completed			
Spindle CLV error	0 x 65	CLV on could not be completed			
SPINDLE TIMEOUT (0 x 7*)					
Spindle on timeout	0 x 71	Did timeout at spindle on			
Spindle off timeout	0 x 72	Did timeout at spindle stop			
Spindle lost timeout	0 x 73	Did timeout at spindle backup	Are not there a dirt or a scratch in the Disc? Is FG output from the driver?	1. Spindle motor 2. Spindle driver	
Spindle CAV timeout	0 x 74	Did timeout at CAV on	Is spindle rotating? Is FG output from the driver? Is the PDM output from Front End?	1. Spindle motor 2. Spindle driver 3. Front End IC	
Spindle CLV timeout	0 x 75	Did timeout at CLV on			
ACQUISITION ERROR (0 x 8*)					
PLL lost error	0 x 83	PLL is lost	Are not there a dirt or a scratch in the Disc?	1. Pickup 2. Front End IC	
ACQUISITION TIMEOUT (0 x 9*)					
PLL lost timeout	0 x 93	Did timeout at PLL backup	Are not there a dirt or a scratch in the Disc?	1. Pickup 2. Front End IC	
DECODER ERROR (0 x a*)					
ID lost error	0 x a3	ID is not readable	Are not there a dirt or a scratch in the Disc?	1. Pickup 2. Front End IC	
DECODER TIMEOUT (0 x b*)					
ID lost timeout	0xb3	Did timeout at ID backup	Are not there a dirt or a scratch in the Disc?	1. Pickup 2. Front End IC	
DEVICE ERROR (0 x d*)					
SRAM error	0 x d1	Cannot access SRAM	Power supply of SRAM Is not bus line short-circuiting?	1. SRAM 2. Front End IC 3. Front End-SRAM bus line	
FAILSAFE (0 x e*)					
Unexpected error	0 x e1	Unexpected error		1. software runaway 3. Software bug	

■ Protection Specifications and Service Mode

• Protection Specifications

The system microcomputer (AF Assy IC5501) for this unit always monitors if abnormality of the power is generated, and as soon as an abnormality is detected shuts off the power. The specifications of the microcomputer terminal for monitoring are as follows:

Name of microcomputer terminal		XPROTECT (Pin 22)	VDET (Pin 17)
Monitoring item		Abnormality of AMP-system power Short-circuiting of the SP terminal, etc.	Abnormality of power inside the DVDM Assy
Voltage at terminal	In normal conditions	0.71 Vdd* or more	0.5 Vdd-0.85 Vdd*
	In abnormal conditions	0.36 Vdd-0.71 Vdd*	
	In failure	0.36 Vdd* or less	0.85 Vdd* or more 0.5 Vdd* or less
Monitoring start time		1.5 sec after power is turned on	Detection starts 0.5 sec after DVD module is turned on.
Time required for determining abnormality		0.5 sec after detection	0.5 sec after detection

*Vdd = Approx. 5 V (depending on the unit)

In abnormal conditions or in failure, the TIMER LED flashes after the power is shut off. If the power was shut off because of an abnormality, it can be turned on by pressing the STANDBY/ON key. However, if the power was shut off because of failure, for one minute after a shutdown the STANDBY/ON key is disabled in order to protect against possible ignition of fumes. If the AC power cord is pulled out during this one minute of standby, when the AC power cord is reconnected, the STANDBY/ON key will still be disabled until the remaining seconds have elapsed.

This unit has Service Test mode for analyzing the above power abnormality. Its specifications are as follows:

1. Specific conditions for Service Test mode

- VDET is neglected.
- XPROTECT is neglected.
- Even if the unit is urgently shut down in failure in Normal mode, you can turn it on without waiting for one minute.

2. How to enter Service Test mode

- While holding the "DISC 1 key" and "STOP key" pressed, connect AC power cord.

3. How to quit Service Test mode, and the conditions for quitting

- To quit Service Test mode, turn the power off or disconnect the AC power cord.
- When quitting Service Test mode, only RAM data related to protection are cleared.

4. Indications when Service Test mode starts

- Indications on the FL display when Service Test mode starts differ depending on whether the unit was turned off normally or if the unit was urgently shut down because of the abnormality of the power, as described below.

[After the power is turned off normally]

FL display `Welcome!` ⇩
FL display `Volume 0` ⇩
FL display `DV SERVICE`

[After the power is shut down because of an abnormality in the AMP system]

FL display `PRTCT WNG` ⇩
FL display `Volume 0` ⇩
FL display `DV SERVICE`

[After the power is shut down because of a failure in the AMP system]

FL display `PRTCT ERR` ⇩
FL display `Volume 0` ⇩
FL display `DV SERVICE`

[After the power is shut down because of a failure in the DVD system]

FL display `DVD PRTECT` ⇩
FL display `Volume 0` ⇩
FL display `DV SERVICE`

5. Operations during Service Test mode

- Basically, operations in Service Test mode are the same as in Normal mode. However, to clarify that it is in Service Test mode, during this mode, when functions are changed, the indications on the FL display become as follows:

[Functions]	[Indications on the FL display]	[Functions]	[Indications on the FL display]
DVD/CD	`DV SERVICE`	LINE2	`L2 SERVICE`
TUNER	`TX SERVICE`	TV	`TV SERVICE`
LINE1	`L1 SERVICE`		

6. Operations during DSP module error diagnosis function

[How to enter DSP module error diagnosis]

• Press "DISPLAY" button in service test mode to select the mode that DSP error messages are displayed.

[How to quit DSP module error diagnosis]

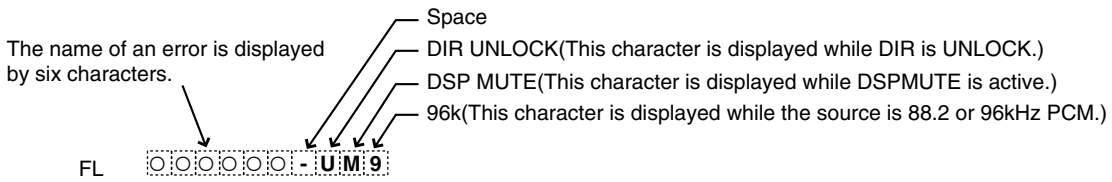
• Press "DISPLAY" button again to select normal service test mode.

For this reason, the usual function of "display" is not effective during Service Test mode.

• DVD total running time/remaining time display is prohibited.

• OSD changing on TV is also prohibitted.

■ Specification of DSP error display


The name of an error is displayed by six characters.
Space
DIR UNLOCK(This character is displayed while DIR is UNLOCK.)
DSP MUTE(This character is displayed while DSPMUTE is active.)
96k(This character is displayed while the source is 88.2 or 96kHz PCM.)
FL
- U M 9

[Error]	[Indications on the FL display]
ERR_0	D I R E R R - U M
ERR_1	D S P E R R - U M
ERR_2	H R E Q - U M
ERR_3	D S P N G - U M
ERR_4	D M U T E - M
NO ERR (The source is 88.2/96kHz.)	D S P O K - 9
NO ERR (The source is not 88.2/96kHz.)	D S P O K -

Refer to "7.1.9 DSP TROUBLE SHOOTING".

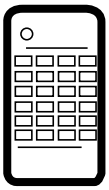
7.1.7 ID NUMBER AND ID DATA SETTING

Caution:
For the DVD players compatible with DVD-RW, for playback of a DVD-RW disc (CPRM), it is necessary that an individual ID number and ID data are set for each player. If the ID number and ID data be not properly set in the manner described below, future operations cannot be guaranteed. The ID number is written on the yellow label at the rear panel of the player.
If there is no yellow label, before downloading FLASH ROM, take note of the ID number set following the procedures outlined in "ID Number Confirmation Mode" on the next page.

Note: Enter ID numbers while the unit is in Stop mode so that the values set will be immediately written to the flash ROM.

Setting an ID number or ID data is required in the following case:
If "No ID Number!" or "NO ID DATA!" is displayed on the TV screen and on the FL display for a few seconds immediately after the power to the player is turned on or during Stop mode.

JIGS AND MEASURING INSTRUMENTS

 Service Remote Control Unit [GGF1381]	DVD Data Disc [GGV1174 (& GGV1133)]

Note) GGV1175 is to be released in May, 2004.

■ ID Number Input Mode

① To enter ID Number Input Mode, with no ID number set, such as in a case of immediately after upgrading the firmware, press the ESC key then the STEREO key.

Note: If a previous ID number and ID data, such as a factory-preset ID number and ID data, are maintained, the unit enters ID Number Confirmation Mode when the above keys are pressed. However, if only an ID number is maintained, the unit enters ID Data Input Mode.

② Enter a 9-digit ID number. The ID number is also displayed on the FL display.

③ By pressing the CLEAR key without having input a number, you can exit this mode. Each press of this key after a number has been input deletes one digit.

```
[Player's ID Number Setting]
 ID Number ?
 ---------
 <CLEAR>  Exit

 Input ID Number !
```

④ After entering all 9 digits, if you press the PLAY key, the unit enters Compare mode. Enter the same ID number again. Only if your two input numbers match, the ID number is set. Compare mode helps eliminate mistyping of the ID number.

Note: If you press the PLAY button before inputting a 9-digit ID number, the unit returns to Step ② without doing anything else.

⑤ After entering all 9 digits, if you press the SEARCH key, the unit unconditionally sets the input number as the ID number. Then the unit automatically enters Player's Data Input Mode. (The SEARCH key is not accepted after all 9 digits have been entered.)

```
[Player's ID Number Setting]
 ID Number ?
  0 0 0 0 0 0 0 0 1

④→ <PLAY>      Compare Mode
⑤→ <SEARCH>  Enter

 Input ID Number !
```

⑥ This display appears when the PLAY key is pressed in Step 4. Enter a 9-digit number to compare. The number is also displayed on the FL display.

⑦ By pressing the CLEAR key without having input a number, the unit returns to Step ② without doing anything else. Each press of this key after a number has been input deletes one digit.

```
[Player's ID Number Setting]
 ID Number ?
    0 0 0 0 0 0 0 0 1
 Compare
⑥→  * * * * * * * * *


 Input ID Number !
```

⑧ After entering all 9 digits, if you press the PLAY key, the unit compares the numbers input in Steps ② and ⑥, and only if the numbers match, that number is set as the ID. Then the unit automatically enters ID DATA Input Mode. If the numbers do not match, the disc tray is opened, and the unit exits ID Number Input Mode.

Note: If you press the PLAY button before inputting a 9-digit ID number, the unit returns to Step ⑥ without doing anything else.

```
[Player's ID Number Setting]
 ID Number ?
    0 0 0 0 0 0 0 0 1
 Compare
    0 0 0 0 0 0 0 0 1

⑧→ <PLAY>  Enter

 Input ID Number !
```

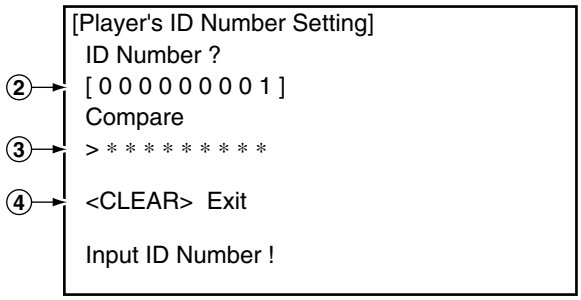
■ ID Number Confirmation Mode

① To enter ID Number Confirmation Mode after the ID number and the ID data are set, press the ESC key then the STEREO key.

② The ID number already set is displayed.
(It is also displayed on the FL display.)

③ Enter a 9-digit number for comparison. This is not required when you only wish to check the ID number.
(The number is also displayed on the FL display.)

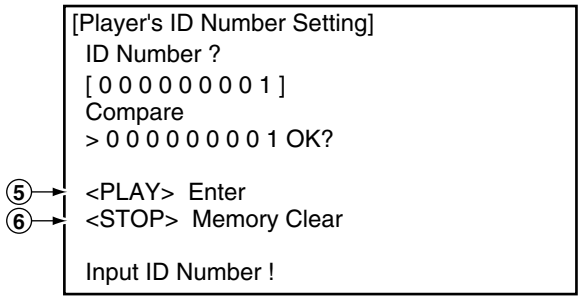
④ By pressing the CLEAR key without having input a number, you can exit this mode. Each press of this key after a number has been input deletes one digit.



⑤ After entering all 9 digits, if you press the PLAY key, the unit compares the number entered in Step ② with the ID number set, and only if the numbers match, the unit automatically exits ID Number Confirmation Mode. If an ID data has not been entered, the unit enters ID DATA Input Mode. If the numbers do not match, the disc tray is opened, and the unit exits ID Number Confirmation Mode.

Note: If you press the PLAY button before inputting a 9-digit ID number, the unit returns to Step ④ without doing anything else.

⑥ After entering all 9 digits, if you press the STOP key, the unit compares the number entered in Step ③ with the ID number set, and only if the numbers match, the unit automatically deletes the ID number and exits this mode. If the numbers do not match, the disc tray openes, and the unit exits this mode. (The STOP key is not accepted after all 9 digits have been entered.)



• Indication of an ID number already set

An ID number already set is displayed in the following cases:

1) When the ESC key then the CLEAR key are pressed, user settings are cleared, then the ID number set is displayed on the screen. In this case, the ID number is not displayed on the FL display.
2) When the unit enters ID Number Confirmation Mode by pressing the ESC key then the CLEAR key, the ID number set is displayed. In this case, the ID number is also displayed on the FL display.
If you only need to confirm the ID number, you can exit this mode by pressing the CLEAR key or turning off the power.

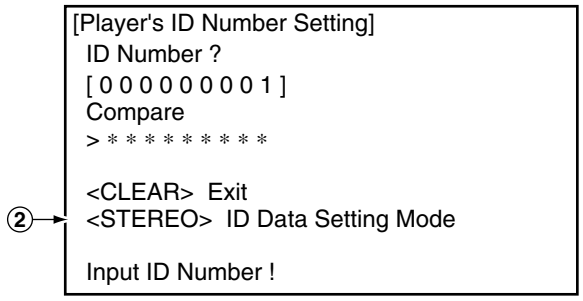
• Indication when no ID number is set

If no ID number is set, the message "No ID Number!" flashes on the screen and FL display for a few seconds after the power is turned on or during Stop mode.

ID DATA Input Mode

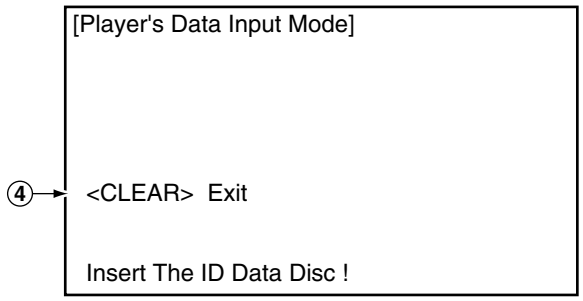
① To enter ID DATA Input Mode, with the ID number set, press the ESC key then the STEREO key.

② When the STEREO key is pressed, the unit enters ID DATA Input Mode.



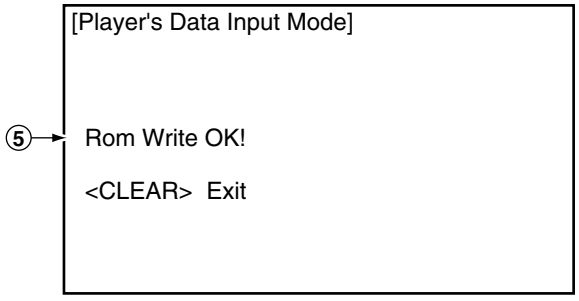
③ If the DVD DATA DISC (GGV1174) is loaded in this mode, the unit automatically starts reading the data.
(If the ID DISC has already been loaded, the unit does not start reading the data. In this case, open the tray then close.)

④ To exit this mode, press the CLEAR key. While data are being read from the DVD DATA DISC (GGV1174), you cannot exit this mode.

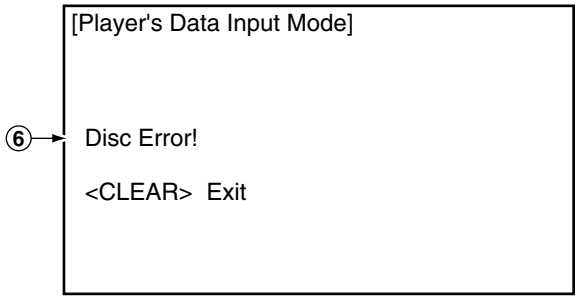


⑤ When writing of the data read from the disc to flash ROM is completed, "Rom Write OK!" is displayed. After seeing this message, you can exit this mode by pressing the CLEAR key.

Note: Whether or not the data have been written to flash ROM can be confirmed by the message "Rom Write OK!" being displayed after the disc is read.



⑥ If the data cannot be read from the disc, "Disc Error!" is displayed on the screen, and the disc is ejected.



• Indication when the data have not been set
If no ID data are set after the ID number is changed, the message "NO ID DATA" flashes on the screen and FL display for a few seconds after the power is turned on or during Stop mode.

7.1.8 TROUBLE SHOOTING

Microcomputer Section (AF Assy : IC5501)

Symptom	Possible Cause	Check Method
• The unit cannot be turned on.	The microcomputer was not reset.	Check if the level of the terminal XRESET (Pin 8) is "H." If it is not, check the RESET circuit.
	The AC pulse is not input.	Check if the AC pulse is input to Pin 4 of the AC input terminal. If it is not, check the AC pulse generation
	The oscillation circuit of the microcomputer does not function.	The microcomputer or the oscillation circuit is broken. Change the microcomputer or the oscillation circuit.
The unit shuts itself off soon after it is turned on.	• If the Function is DVD, the voltage of the VDET input (Pin 17) is either 0.5 Vdd or less or 0.85 Vdd or more. • The voltage of the PROTECT input (Pin 22) is 0.71 Vdd or less.	If the voltage at Pin 17 of the VDET terminal of the microcomputer is either 0.5 Vdd or less or 0.85 Vdd or more, adjust so that it stays between 0.5 and 0.85 Vdd.
• DVD does not operate at all. • Time is not displayed in FL display during DVD function.	Communication with the DVD microcomputer has not been established.	• Check that the terminal (Pins 23-25, 29, and 30) for communication with the DVD microcomputer is live, and if it is not, check if the flexible cable is disconnected. • Check if an "H" signal is output to Pin 93 of the XDVDRST terminal.
All operation keys are disabled.	The unit recognizes that an operation key has already been pressed.	If no operation key has been pressed, check if the voltage at Pins 18 and 19 of the KEY input terminal is 5 V. If it is not, check if the operation switch on the line is in failure.

DVD Section

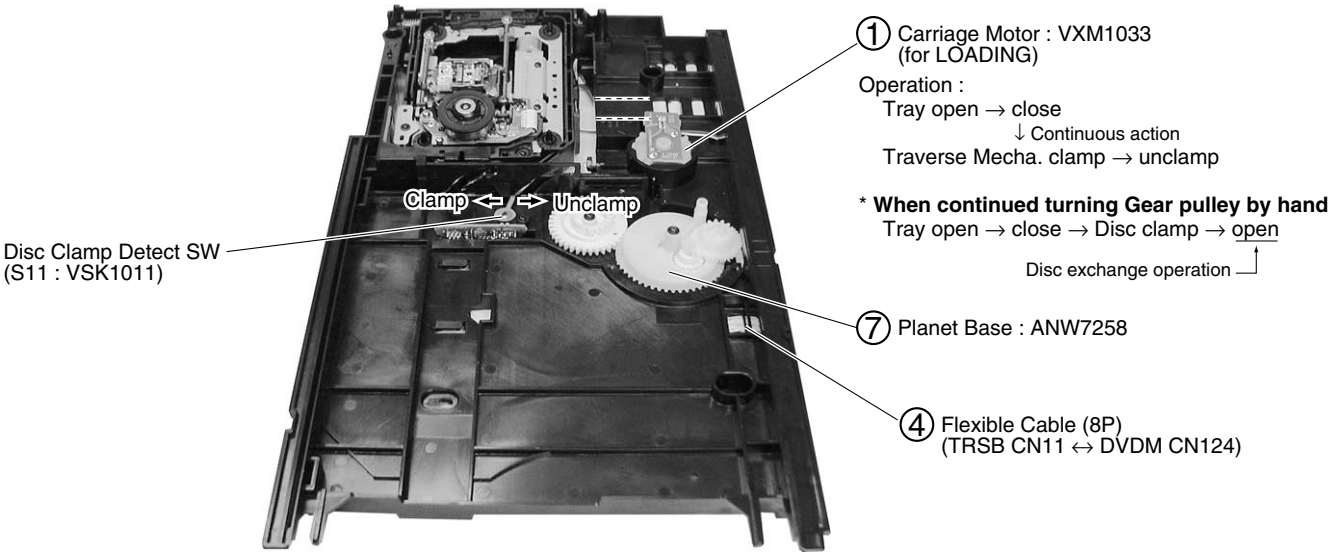
No.	Symptoms	Diagnosis Contents	Possible Defective Points
1	An opening screen is not displayed on the monitor (The FL display lights. The mechanism does not work.)	Is the level at both IC5501-pin 93 (XDVDRST) and pin 1(DVD ON/OFF) on the AF Assy "H" ?	µcom (AF IC5501)
		Check the voltage of CN911-pin 28 and 29 (VPR+8) on the DVDM Assy.	DVDM Assy CN911
		Check that the following voltages are output : IC411-pin 3 : 1.8V, IC421-pin 3 : 1.8V and IC431-pin 1 : 5V on the DVDM Assy	Each regulator on the DVDM Assy
		Are resonators (27MHz, 20MHz) on the DVDM Assy oscillating ?	Crystal resonator (DVDM Assy X601 and X301)
		Refer to contents of an FE error displayed on the FL display. (SRAM defectiveness, I2C communication line defectiveness, etc.)	FRONT END IC (DVDM IC301)
		• Is a signal input into IC601-pin 132 (CE3) on the DVDM Assy ? (Is a signal fluctuating for several seconds after the power is turned on ?) → Communication with flash ROM • Are the signals input into IC602-pin 16 (SMIWE), pin 19 (SMICS0) and pin 38 (SMICLK) on the DVDM Assy ? (Is a signal fluctuating ?) → Communication with flash ROM	• BACK END IC (DVDM IC601) • Flash ROM (DVDM IC603) • 64M SDRAM (DVDM IC602)
		Is a signal output from IC603-pin 28 (CPU_OE) on the DVDM Assy? (Is a signal fluctuating for several seconds after the power is turned on ?)	• BACK END IC (DVDM IC601) • Flash ROM (DVDM IC603)
		Is a signal input into IC5501-pin 67 (DVDACK) on the AF Assy ? (Is a signal fluctuating ?) → Communication with µcom	µcom (AF IC5501)
		Is a signal output from IC5501-pin 29 and 30 (SYS_1, 2) on the AF Assy ? (Is a signal fluctuating in the range of 0-5V ?)	µcom (AF IC5501)
		Are the signals output from IC5501-pin 23, 24 and 25 on the AF Assy ? (in the range of 0-5V)	µcom (AF IC5501) – BACK END IC (DVDM IC601) communication line
2	An opening screen is not displayed on the monitor (The FL display lights. The mechanism does not work.)	Check the video signal path between BACK END IC (DVDM IC601) and video-out terminal (see the block diagram)	DVDM Assy • Video circuit • after BACK END IC (IC601)
3	A tray cannot be opened. (An opening screen is displayed on the monitor)	• Are wires of CN123 on the DVDM Assy disconnected or damaged ? • Does the voltage of CN124 pin 3 to pin 6 on the DVDM Assy change normally ? • CN124 pin 6 (OPEN): Tray is fully closed: "H", Tray is fully opened: "L" • CN124 pin 3 (CLAMP): Clamping: "L", Releasing the clamper: "H"	Connector / wire LOADING SW (SSRB S21) CLAMP SW (TRSB S11)
		• Is a LOAD-DRVC signal reaching ? • Are the signals output from IC151 pin 9 and pin 8 on the DVDM Assy ? Pin 9: Approx. 6V during opening tray approx. 0V during closing tray. Pin 8: Approx. 0V during opening tray approx. 6V during closing tray. • Does the voltage of CN122 pin 17 change by pressing the Inside switch.	BACK END IC (DVDM IC601) Carousel driver (DVDM IC151) Inside switch
4	Rotary tray does not turn (Opening screen is OK)	• Check each cable (DVDM – TRSB/TRSB – SSRB/SSRB – TRAY motor) • Is a signal output from IC601-pin 114 (ROT DRV) on the DVDM Assy ? (Is a signal fluctuating of 0-3.3V ?) • Is the motor drive voltage output it at CN124 pin 7 and pin 8 ?	Connector / cable BACK END IC (DVDM IC601) IC151 and peripheral parts of the DVDM Assy

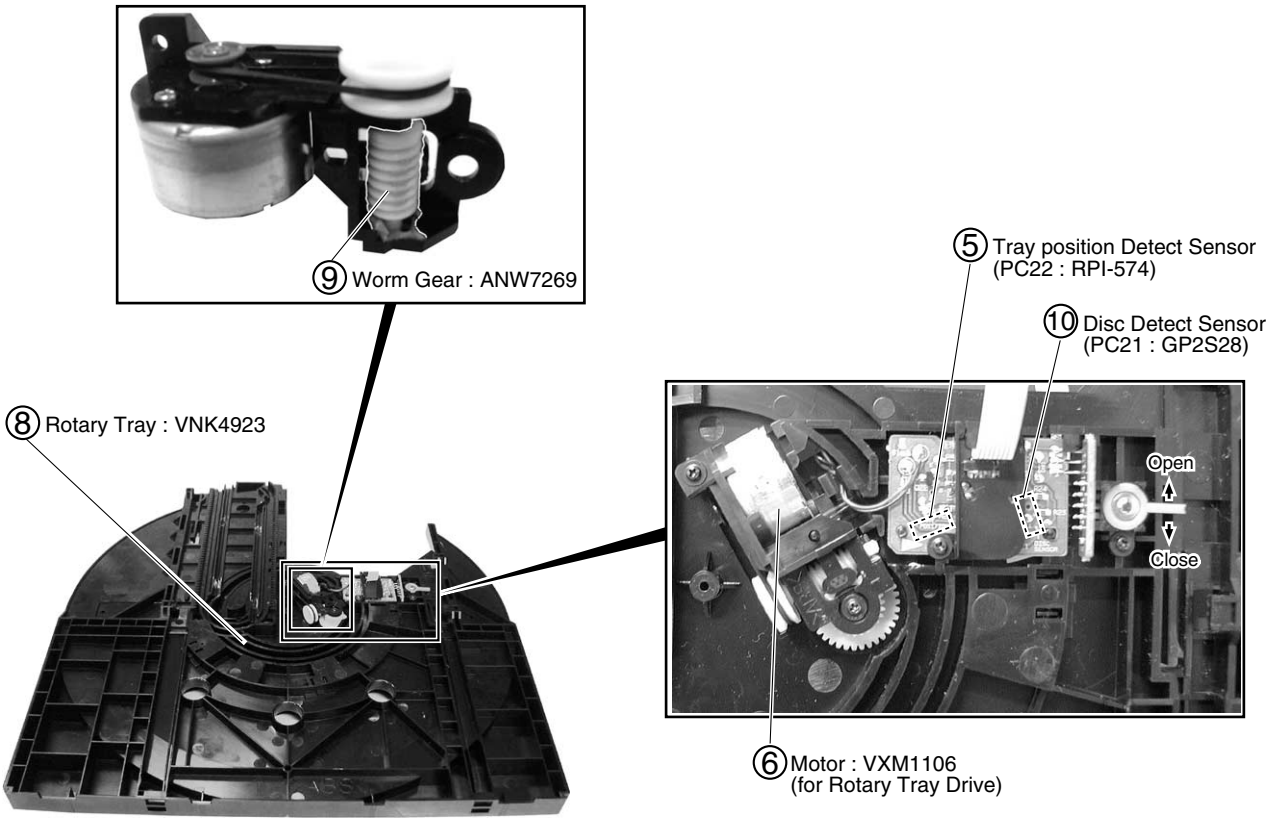
No.	Symptoms	Diagnosis Contents	Possible Defective Points
5	Initialization operation of the table mechanism is not completed. (Rotary tray does not stop at the right position.)	• While a tray rotates, is a signal output from CN124-pin 5 (TRAY POS) on the DVDM Assy ? (Is a signal fluctuating in the range of 0-3V ?) • While a tray rotates, is a signal outputting from CN124-pin 4 (DISC SENS) on the DVDM Assy ? (Is a signal fluctuating in the range of 0-3V ?)	Connector / cable Tray Position Sensor (SSRB PC22) Disc Sensor (SSRB PC21)
6	Playback impossible (no focusing)	Are the signals output from IC101-pin 34 (F_DRV) and pin 35 (F_RTN) on the DVDM Assy ?	FTS Driver IC (DVDM IC101)
		Does 650-nm LD emit light ? Does a pickup lens move up / down ? Does an actuator spring bend ?	Pickup
		• Are plastic parts damaged? Or is a shaft detached? • Is the turntable detached or tilted?	Mechanism section
		Is flexible cable of CN121 on the DVDM Assy disconnected or damaged ?	Flexible cable / connector
		Is signal output from IC301-pin 33 (FACT) on the DVDM Assy ? (Device control of about 2.6 V is output usually. It is fluctuated by about ± 100 mV with focus up / down.)	FRONT END IC (DVDM IC301)
7	Playback impossible (Spindle does not turn)	Are the signals output from IC101-pin 12 (A3), pin 13 (A2) and pin 14 (A1) on the DVDM Assy ? Is pin 41 fixed LOW and is pin 38 fixed HIGH ?	FTS Driver IC (DVDM IC101)
		Is there any part detached from the spindle motor? Or Is there any foreign object lodged in it?	Mechanism section (Spindle motor)
		Are wires of CN122 (DVDM Assy) and CN3 (SSIB Assy) disconnected or damaged ?	Flexible cable / connector
		Is signal output from IC301-pin 44 (SPDL_PDM) on the DVDM Assy ?	FRONT END IC (DVDM IC301)
8	Playback impossible (Playback stops)	Does 650-nm LD deteriorate ? If the voltage at both ends of R201 on the DVDM Assy is 0.7 V or more, the 650-nm LD is definitely deteriorated.	650-nm LD deteriorated. (When playback of a DVD is impossible)
		Does 780-nm LD deteriorate ? If the voltage at both ends of R211 on the DVDM Assy is 1.5 V or more, the 780-nm LD is definitely deteriorated.	780-nm LD deteriorated. (When playback of CD is impossible)
		Is there abnormality in FG waveform ?	FG output : FTS Driver IC (DVDM IC101)
		Are there scratches or dirt on the disc ?	Disc
9	Picture disturbance during playback (block noise, freeze, other)	Are there scratches or dirt on the disc ?	Disc
		Is there a problem with the format of the disc?	Disc
10	No sound (Picture is normal)		
		Is signal output from DOUT signal (CN911-pin 21) on the DVDM Assy ?	DVDM CN911-pin 21

Table Mechanism Section

Symptom	Possible Cause	Location of Trouble
The tray does not open. (Nothing works) Press the ▲ (OPEN) key. → The "OPEN" indication does not disappear. Press the ► (PLAY) key. → The indication changes from "NO DISC" to "OPEN," and the unit does not operate. (When a disc is not loaded in the tray.)	• Damage of the loading motor • Disconnection, breaking, or damage of the jumper wire	①
The tray opens by itself when the power is turned on and stays open.	• Disconnection, breaking, or damage of the flexible cable (8P)	④
The rotary tray does not stop at its home position. (It may stop suddenly during rotation.)	• Breaking or damage of the tray position detect sensor (PC22)	⑤
The indication "CHANGE" does not change when the power is turned on. The rotary tray does not rotate. (Opening and closing of the tray are possible.)	• Damage of the motor for the rotary tray drive • Disconnection, breaking, or damage of the jumper wire	⑥
A clatter is heard when the disc is clamped.	• The gears of the planet base are not engaged correctly.	⑦
The rotation of the rotary tray does not stop after the power is turned on. Two or more disc loading indications light for tray Nos. 1 to 5. **Examples:** Normal condition: DISC 1 2 3 4 5 — One indication lights. Abnormal condition: DISC 1 2 3 4 5 — Two indications light.	The slit part on the bottom of the rotary tray is damaged.	⑧
The rotary tray rattles while rotating. When the rotary tray rotates, a rattling sound is heard.	• Damage of the worm gear • Insufficient lubricant	⑨
Even during playback, the indication "NO DISC" is displayed. It takes longer than normal until playback starts.	• Breaking or damage of the disc detect sensor (PC21)	⑩

Location


① Carriage Motor : VXM1033
(for LOADING)
Operation :
Tray open → close
↓ Continuous action
Traverse Mecha. clamp → unclamp
* When continued turning Gear pulley by hand
Tray open → close → Disc clamp → open
Disc exchange operation
Clamp
Unclamp
Disc Clamp Detect SW
(S11 : VSK1011)
⑦ Planet Base : ANW7258
④ Flexible Cable (8P)
(TRSB CN11 ↔ DVDM CN124)


⑨ Worm Gear : ANW7269
⑤ Tray position Detect Sensor
(PC22 : RPI-574)
⑩ Disc Detect Sensor
(PC21 : GP2S28)
⑧ Rotary Tray : VNK4923
Open
Close
⑥ Motor : VXM1106
(for Rotary Tray Drive)

7.1.9 DSP TROUBLE SHOOTING

Detectable DSP Errors

The following conditions are premised,
in order to eliminate causes other than "DSP-assy" and "between DSP-assy and microcomputers".

- Electric power is correctly supplied to DSP-assy.
- The SPDIF signal is coming to the input port of DIR("COAX IN" RX0 & "OPT IN" RX3 & "DVD" RX7).
- There is no audio output from DSP-assy, or audio output is unusual.

FL D I R E R R - U M

• ERR_0 : –Cannot receive data from DIR–

→Communication fault has occurred in somewhere between DIR(PinNo.32 CDTO)–Level Sifte(IC8702)– µ-com(PinNo.80 DIRDO).
→Communication fault has occurred in somewhere between the µ- com-port(*1) which has sent the signal to IC, and each IC.

FL D S P E R R - U M

• ERR_1 : –Cannot receive data from DSP–

→Communication fault has occurred in somewhere between DSP(PinNo.144 DSDO)–Level Shifteer(IC8702)–µ-com(PinNo.50 DSPDO).
→Communication fault has occurred in somewhere between the µ-com-port(*1) which has sent the signal to IC, and each IC.
→Communication fault has occurred in somewhere between the DIR and DSP.

FL H R E Q - U M

• ERR_2 : –There is no return value of HREQ.–

→Communication fault has occurred in somewhere between DSP(PinNo.3 HREQ)–Level Shifteer(IC8702)–µ-com(PinNo.82 DSPHREQ).
→Communication fault has occurred in somewhere between the µ-com-port(*1) which has sent the signal to IC, and each IC.
→Communication fault has occurred in somewhere between the DIR and DSP.

FL D S P N G - U M

• ERR_3 : –ERR information from DSP–

→Communication fault has occurred in somewhere between the µ-com-port(*1) which has sent the signal to IC, and each IC.
(especially the fault inside DSP)
→Communication fault has occurred in somewhere between the DIR and DSP.

FL D M U T E - M

• ERR_4 : –DECOMUTE continues being LOW(MUTE).–

→Communication fault has occurred in somewhere between DSP(PinNo.21 PB12)–Level Shifteer(IC8702)–µ-com(PinNo.86 DECMUTE).
→Communication fault has occurred in somewhere between the É com-port(*1) which has sent the signal to IC, and each IC.
→Communication fault has occurred in somewhere between the DIR and DSP.

Although the followings are not errors, since these are helpful for problem solution, displayed separately.

• ERR_5 : –DIRERR is HIGH(UNLOCK) in digital function.–

If DIRERR continues being HIGH(UNLOCK) without the above-mentioned error display.
→Communication fault has occurred in somewhere between DIR(PinNo.36 INT0)–Level Sifter(IC8702)–µ-com(PinNo.77 DIRERR).

• ERR_6 : –DSPMUTE is LOW (MUTE).–

If DSPMUTE continues being LOW (MUTE) without the above-mentioned error display.
→Communication fault has occurred in somewhere between µ-com(PinNo.86 DSPMUTE)–connector(CN8011andCN8012 No.19MUTEOUT).

Notes :
If the error is fundamental, a priority will become high.
And the error with a high priority is displayed.

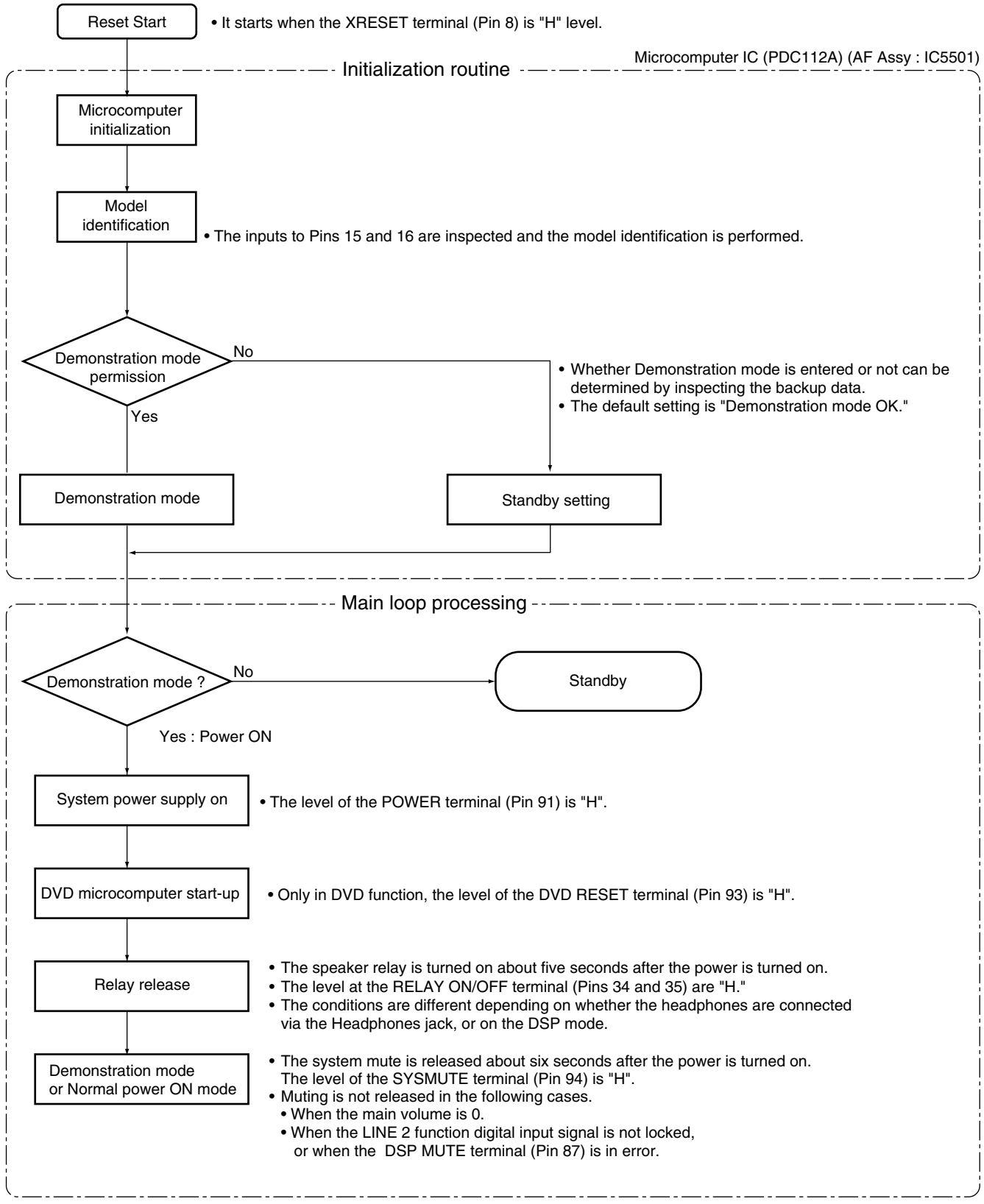
Since the µ-com has not received data from CODEC, a CODEC error is undetectable.
However, when the analog audio output of a DSP module is unusual without error information,
we can surmise that CODEC (or its circumference) is out of order.

*1 : μ-com-port which has sent the signal to IC

μ-com port			DIR port		CODEC port	
Pin No.	Pin Name		Pin No.	Pin Name	Pin No.	Pin Name
No.51	DSPCK	→	No.34	CCCLK	No.42	CCCLK
No.49	DSPDI	→	No.33	CDTI	No.43	CDTI
No.79	DIRCS	→	No.35	CSN	No.41	CSN
No.78	DIRRST	→	No.31	PDN	No.17	PDN

μ-com port			DSP port	
Pin No.	Pin Name		Pin No.	Pin Name
No.51	DSPCK	→	No.1	SCK
No.49	DSPDI	→	No.143	MOSI
No.84	DSPSS	→	No.2	SS
No.85	DSPRST	→	No.44	RESET
No.81	DSPMODE	→	No.137	MODA

7.1.10 POWER ON SEQUENCE

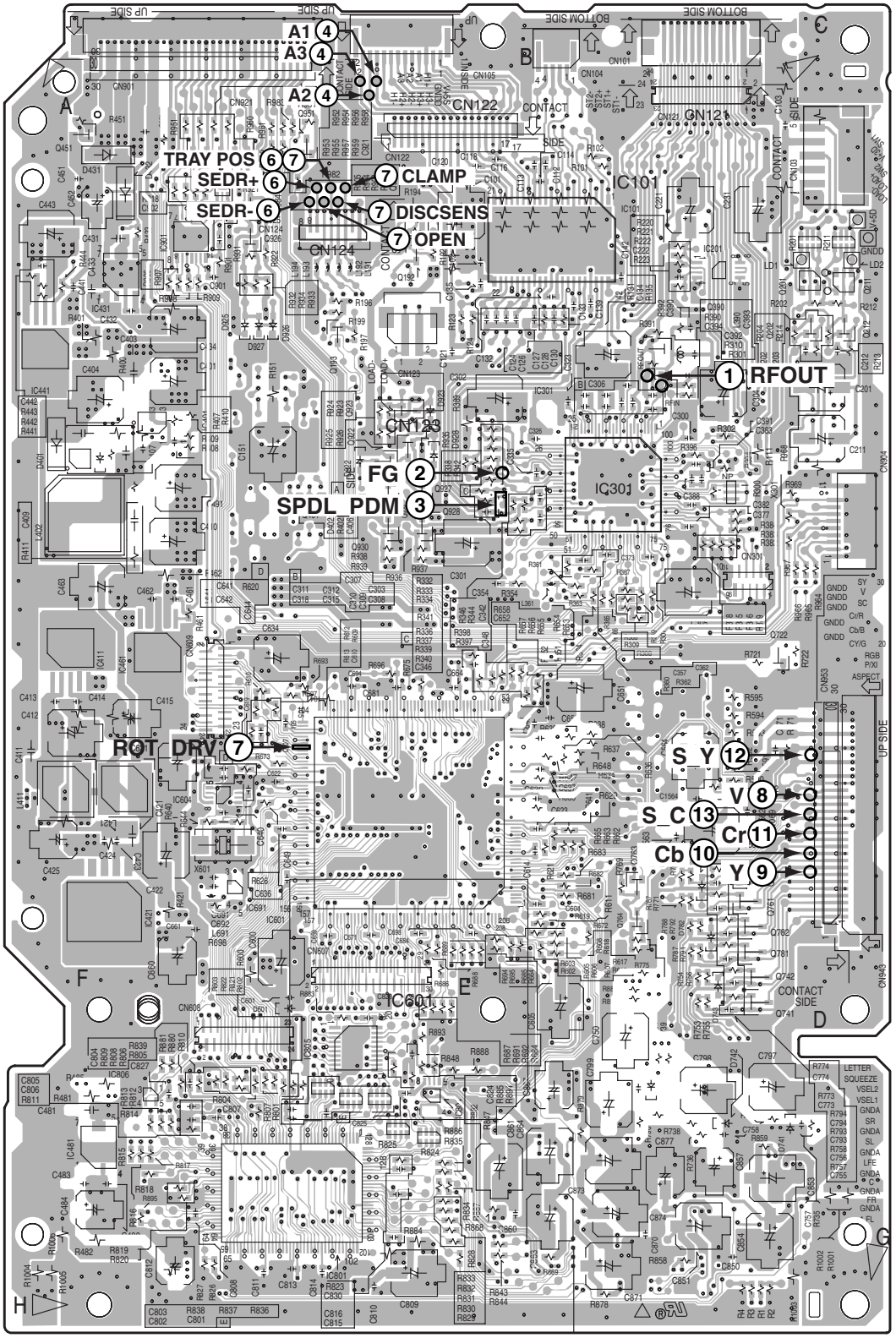

Reset Start
• It starts when the XRESET terminal (Pin 8) is "H" level.
Microcomputer IC (PDC112A) (AF Assy : IC5501)
Initialization routine
Microcomputer initialization
Model identification
• The inputs to Pins 15 and 16 are inspected and the model identification is performed.
Demonstration mode permission
No
Yes
• Whether Demonstration mode is entered or not can be determined by inspecting the backup data.
• The default setting is "Demonstration mode OK."
Demonstration mode
Standby setting
Main loop processing
Demonstration mode ?
No
Standby
Yes : Power ON
System power supply on
• The level of the POWER terminal (Pin 91) is "H".
DVD microcomputer start-up
• Only in DVD function, the level of the DVD RESET terminal (Pin 93) is "H".
Relay release
• The speaker relay is turned on about five seconds after the power is turned on.
• The level at the RELAY ON/OFF terminal (Pins 34 and 35) are "H."
• The conditions are different depending on whether the headphones are connected via the Headphones jack, or on the DSP mode.
Demonstration mode or Normal power ON mode
• The system mute is released about six seconds after the power is turned on. The level of the SYSMUTE terminal (Pin 94) is "H".
• Muting is not released in the following cases.
• When the main volume is 0.
• When the LINE 2 function digital input signal is not locked, or when the DSP MUTE terminal (Pin 87) is in error.

- If no pulse is input to the AC terminal (Pin 4) for about 60 msec when the microcomputer is in Memory Backup mode, it will not do any processing.
- The unit will recover from Memory Backup mode if a reset command is input to the XRESET terminal (Pin 8).

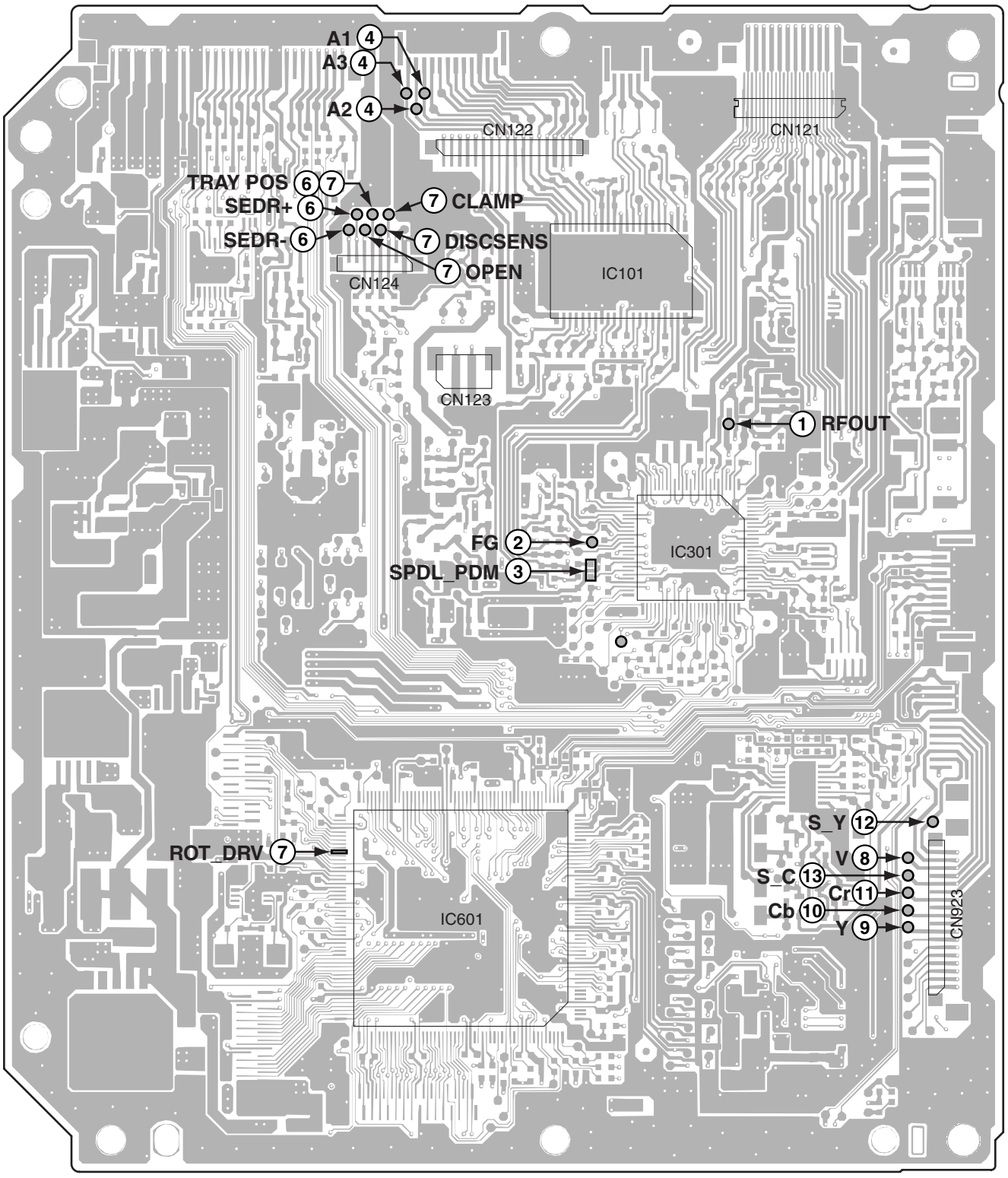
7.1.11 WAVEFORM POINTS LOCATION

SIDE A **SIDE A**

A DVDM ASSY (HTD540 /KUC)



A DVDM ASSY (DV8 / Other)

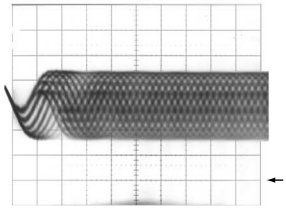


A DVDM ASSY

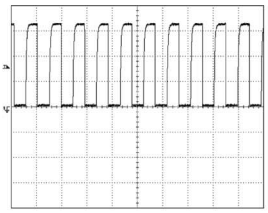
Note : The encircled numbers denote measuring point in the schematic diagram.

Measurement condition : No. 1 to 2 and 8 to 13 : reference A1 (DVD), T2-chp 19, Color -bar

1 IC301-pin 4 (RFOUT)
V: 200mV/div. H: 0.1µsec/div.

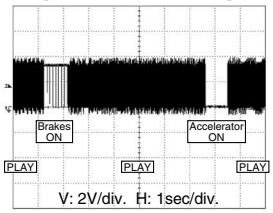


2 IC301-pin 36 (FG)
V: 1V/div. H: 5msec/div.



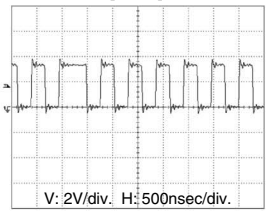
3 IC301-pin 44 (SPDL_PDM)

[PLAY → STOP → PLAY]



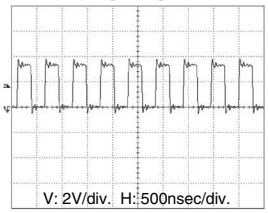
V: 2V/div. H: 1sec/div.

[PLAY]



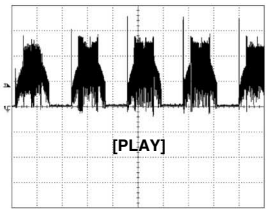
V: 2V/div. H: 500nsec/div.

[STOP]



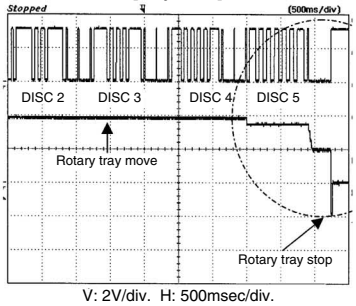
V: 2V/div. H: 500nsec/div.

4 CN122-pin 8, 7, 6 (FTS Driver -A1, A2, A3)
V: 2V/div. H: 2msec/div.



6 CN124-pin 5 (TRAY POS)
CN124-pin 7, 8
(Rotating Tray Motor drive voltage)

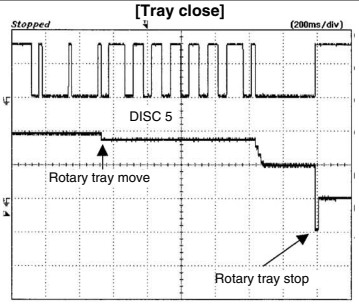
[Tray close]



V: 2V/div. H: 500msec/div.

Elements on larger

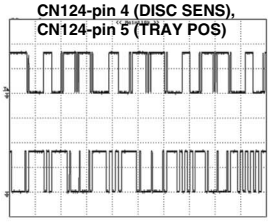
[Tray close]



V: 2V/div. H: 200msec/div.

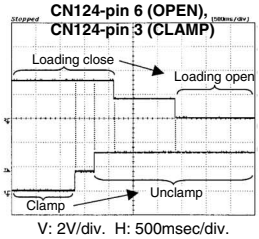
7 CN124-pin 4, 5, 6, 3
IC601-pin 114

[Tray move]
CN124-pin 4 (DISC SENS),
CN124-pin 5 (TRAY POS)



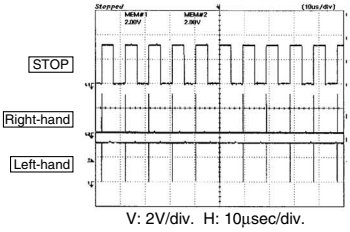
V: 2V/div. H: 1sec/div.

[Tray open]
CN124-pin 6 (OPEN),
CN124-pin 3 (CLAMP)



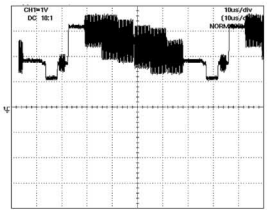
V: 2V/div. H: 500msec/div.

IC601-pin 114 (ROT_DRV)



V: 2V/div. H: 10µsec/div.

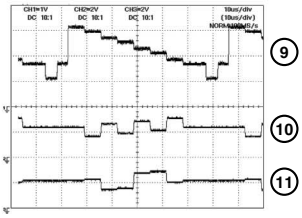
8 CN923-pin 16 (Composite Video out)
V: 1V/div. H: 10µsec/div.



9 CN923-pin 8 (Component Video out-Y)
V: 1V/div. H: 10µsec/div.

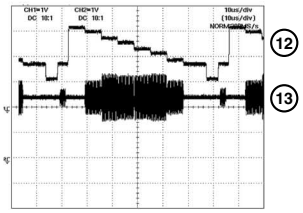
10 CN923-pin 10 (Component Video out-Pb)
V: 2V/div. H: 10µsec/div.

11 CN923-pin 12 (Component Video out-Pr)
V: 2V/div. H: 10µsec/div.



12 CN923-pin 18 (S Video out-Y)
V: 1V/div. H: 10µsec/div.

13 CN923-pin 14 (S Video out-C)
V: 1V/div. H: 10µsec/div.



7.1.12 PROTECTION CIRCUIT

If the TIMER LED on the front panel flashes, check the protection circuit.
Note: If the protection circuit activates, the unit will not recover for 60 seconds even if the AC power cord is disconnected then reconnected.
If you activate Service Test mode, the protection circuit becomes invalid, which makes diagnosis easy. (To activate Service Test mode, while holding the STOP key and the DISC 1 key pressed, press the STANDBY/ON key.)
There are three types of operations for the protection circuit, which are indicated on the FL display when Service Test mode is entered:

PRTCT WNG: The unit was shut down because of an abnormality in the AMP system. (The PROTECT line operates at the MID level.)
PRTCT ERR: The unit was shut down because of a failure in the AMP system. (The PROTECT line operates at the LO level.)
DVD PRTECT: The unit was shut down because of a failure in the DVD system. (The VDET line operates at the HI or LO level.)

■ Conditions for the protect circuit operations

	Voltage		Conditions	FL display in Service Test mode
PROTECT	HI level	>3.55V	Normal	
	MID level	1.8V - 3.5V	The unit is shut down because of an abnormality.	PRTCT WNG
	LO level	<1.8V	The unit is shut down because of a failure.	PRTCT ERR
VDET	HI level	>4.25V	The unit is shut down because of a failure.	DVD PRTECT
	MID level	3.3V	Normal	
	LO level	<2.5V	The unit is shut down because of an abnormality.	DVD PRTECT

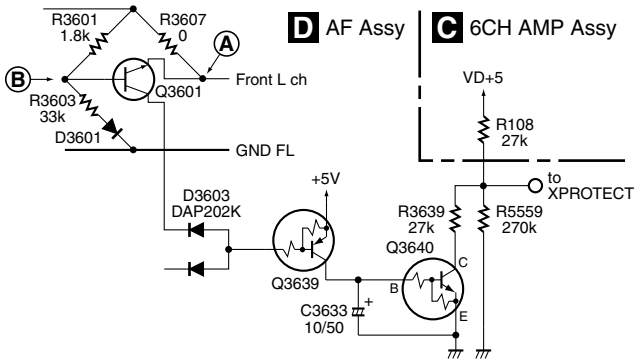
The possible failures for each error message are as follows:
PRTCT WNG:
- The Speaker terminal became overloaded because of short-circuit. (See ①.)

PRTCT ERR:
- The main power supply became LO level because of short-circuit or disconnection of connectors. (See ②.)
- Disconnection of the FAN connector or interruption of rotation of the fan (See ③.)
- DC was generated at the output because of a failure in the AMP system, etc. (See ④.)
- Abnormal temperature was detected by the thermistor. (See ⑤.)

DVD PRTECT:
- An error was generated in the main power supply inside the DVDM. (See ⑥.)

■ Protection circuit that activates against a PRTCT WNG error

① When the Speaker terminal becomes overloaded



In Normal mode, the speaker (6 ohms) is connected between the FL and GND FL points. Because the voltage at Point Ⓐ is higher than that at Point Ⓑ, Q3601 does not operate.

If the resistance between the FL and GND FL points becomes 1.83 ohms or less, Q3601 begins to operate, Q3639 is turned on, Q3640 (E, C, and B)is turned on, and the level of XPROTECT becomes MID.

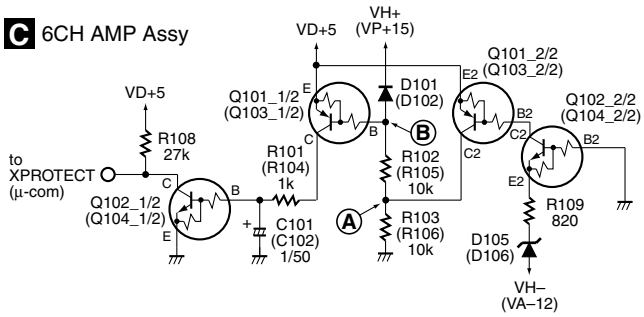
→ The microcomputer detects the XPROTECT level and shuts the power to the unit off.

■ Protection circuit that activates against a PRTCT ERR error

② When the main power supply becomes LO level because of short-circuit or disconnection of connectors

② -1 Short-circuit-detection circuit for the amplifier power circuit (+15 V[VP+15], VD+5, -12 V [VA-12])

Circuit for shutting the power off when VP+15, VD+5, or VA-12 is short-circuited to ground (GND)



- In Normal mode, as Q101 (Q103) (E2, B2, C2) and Q102 (Q104) (E2, B2, C2) are on, the voltage at Point Ⓐ is about 5 V. The voltage at Point Ⓑ is therefore about the same. As Q101 (Q103) (E, C, B) is off, Q102 (Q104) (E, C, B) is also off.

(1) When VH+(VP+15) is short-circuited to GND

As the voltage at Point Ⓑ becomes almost ground potential, and Q101 (Q103) (E, C, B) then Q102 (Q104) (E, C, B) are turned on, the level of XPROTECT becomes low.

→ The microcomputer detects the XPROTECT level and shuts the power to the unit off.

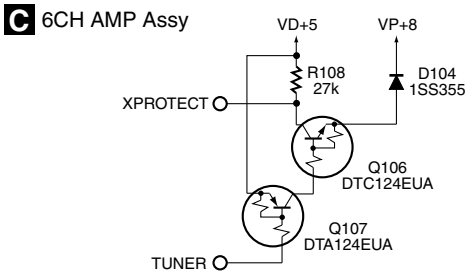
(2) When VH-(VA-12) is short-circuited

As the electric potential of VE at Q102 (Q104) (E2, C2, B2) becomes the same as that at VB, Q102 (Q104) (E2, C2, B2) is turned off. Following this, Q101 (Q103) (E2, B2, C2) is turned off, which changes the voltage at Points Ⓐ and Ⓑ to a value other than 5 V. Therefore, Q101 (Q103) (E, C, B) then Q102 (Q104) (E, C, B) are turned on, the level of XPROTECT becomes low.

(3) When VD+5 is short-circuited

The level of the XPROTECT line becomes low. The microcomputer detects the XPROTECT level and shuts the power to the unit off.

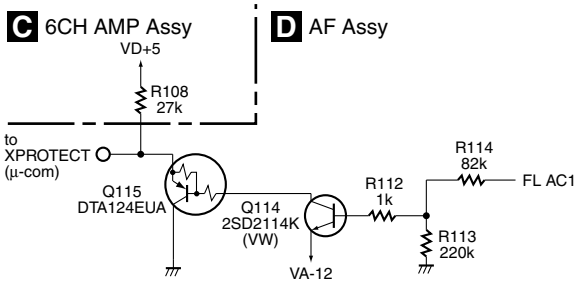
② -2 Short-circuit-detection circuit for the DVD power supply (VP+8)



As the TUNER line is fixed to GND level, Q107 is always on. If the level at VP+8 falls to GND level because of short-circuit, etc., Q106 is turned on, and the level of the XPROTECT line becomes low.

← The microcomputer detects the XPROTECT level and shuts the power to the unit off.

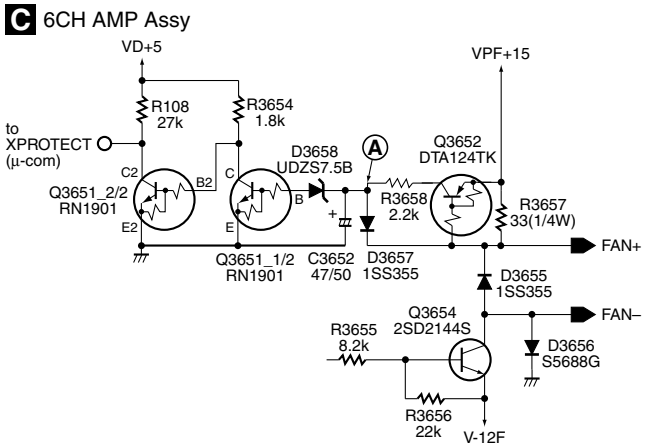
② -3 Short-circuit-detection circuit for VFDP



If VFDP is short-circuited to GND, or if the DC electric potential at FL AC1 becomes GND level (in Normal mode: about -27 V) because of a failure in the DC bias circuit of FL AC1, Q107 then Q115 are turned on, and the level of XPROTECT becomes low.

→ The microcomputer detects the XPROTECT level and shuts the power to the unit off.

③ When the FAN connector is disconnected or when rotation of the fan is interrupted

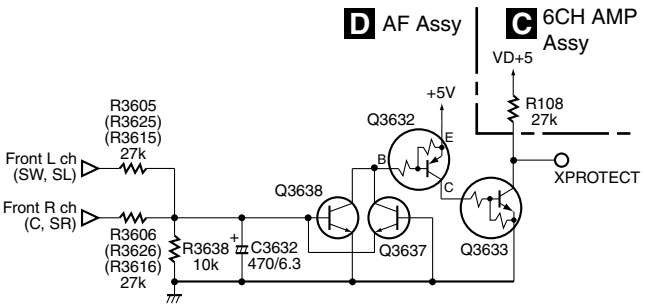


If no fan is connected between FAN+ and FAN-, or when the fan cannot rotate because of a foreign object caught in the blades, the BASE of Q3652 becomes OPEN, and Q3652 and Q3651 (E, C, B) are turned off. Then Q3651 (E2, B2, C2) is turned on, and the level of XPROTECT becomes low.

→ The microcomputer detects the XPROTECT level and shuts the power to the unit off.

When FAN+ and FAN- are short-circuited, the electric potential at Point Ⓐ becomes higher than GND level by the addition of the values at D3656 and D3657. As this value is lower than that at D3658, Q3651 (E, C, B) is turned off, Q3651 (E2, B2, C2) is turned on, and the level of XPROTECT becomes low.

④ When DC is generated at the output because of a failure in the AMP system, etc.



• In Normal mode, both Q3637 and Q3638 are off.

(1) When positive (+) DC voltage is generated at the SP terminal

When positive (+) DC voltage is generated at the L or R channel, and VB of Q3637 becomes higher than that at the operation point, Q3632 (E, C, B) is turned on, and the level of XPROTECT becomes low.

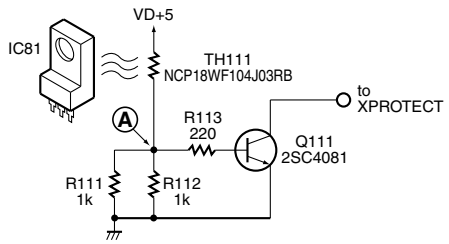
→ The microcomputer detects the XPROTECT level and shuts the power to the unit off.

(2) When negative (-) DC voltage was generated at the SP terminal

Q3638 is turned on, and XPROTECT is activated.

⑤ When abnormally high temperature is detected by the thermistor

⑤ -1 IC81 abnormal temperature detection circuit

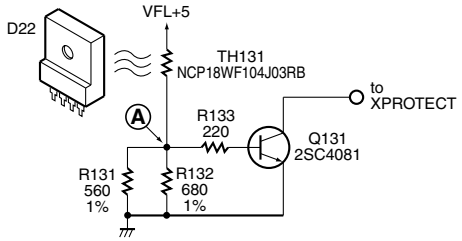


The voltage at Point Ⓐ becomes the divided voltage of TH111 and R111//R112 (combined resistance of parallel-connected resistors R111 and R112.) In Normal mode, the resistance at TH111 is much higher than R111//R112, and Q111 is off. (Note that the resistance at TH111 becomes lower as the temperature increases.) If the solder temperature at IC81 increases abnormally, the temperature at TH111 (thermistor) mounted closest to the land of IC81 increases accordingly, and the resistance at TH111 decreases.

When the temperature at TH111 reaches 90-110_C (varying according to conditions,) the voltage at Point (A) becomes high enough to turn Q111 on, and the level of the XPROTECT line becomes low. The microcomputer detects the XPROTECT level and shuts the power to the unit off.

⑤ -2 D22 abnormal temperature detection circuit

If the solder temperature at D22 becomes abnormally high because of short-circuiting between AC - and +, or AC - and -, this protection circuit is activated.

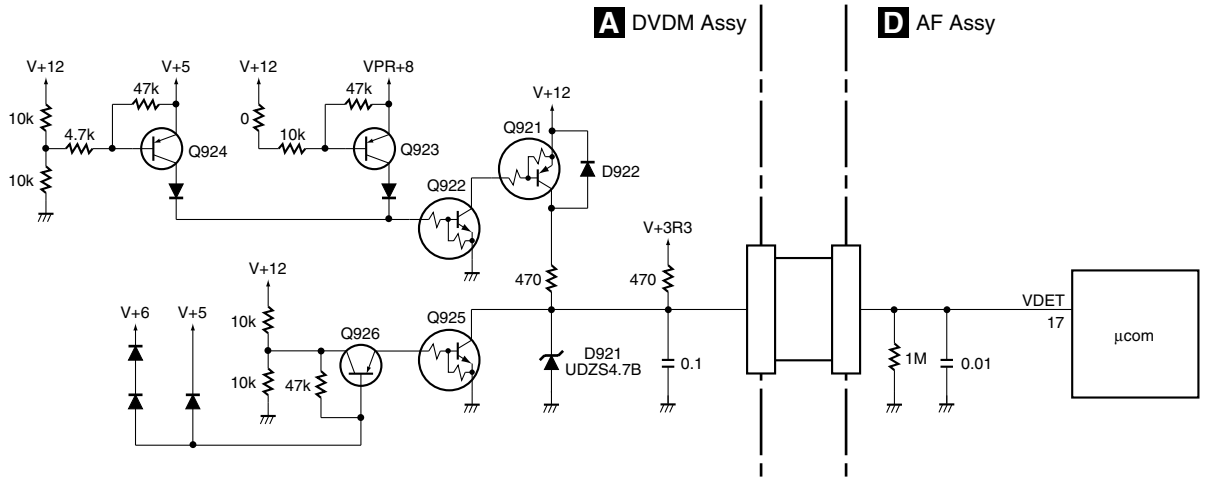


The voltage at Point Ⓐ becomes the divided voltage of TH131 and R131//R132 (combined resistance of parallel-connected resistors R131 and R132.) In Normal mode, the resistance at TH131 is much higher than R131//R132, and Q131 is off. (Note that the resistance at TH131 becomes lower as the temperature increases.) If the solder temperature at D22 increases abnormally, the temperature at TH131 (thermistor) mounted closest to the land of D22 increases accordingly, and the resistance at TH131 decreases.

When the temperature at TH131 reaches 107-125_C (varying according to conditions,) the voltage at Point (A) becomes high enough to turn Q131 on, and the level of the XPROTECT line becomes low. The microcomputer detects the XPROTECT level and shuts the power to the unit off.

■ Protection circuit that activates against a DVD PRTECT error

⑥ The DVDM monitors the voltage of the main power supply by VDET signals.
In Normal mode, the VDET signal is at the MID level (3.3 V). In the following conditions, the VDET signal level becomes L or H, and the microcomputer is notified of this abnormality.



Items to be detected by VDET

(1) When the power voltages inside the DVDM become abnormal, as shown in the table below

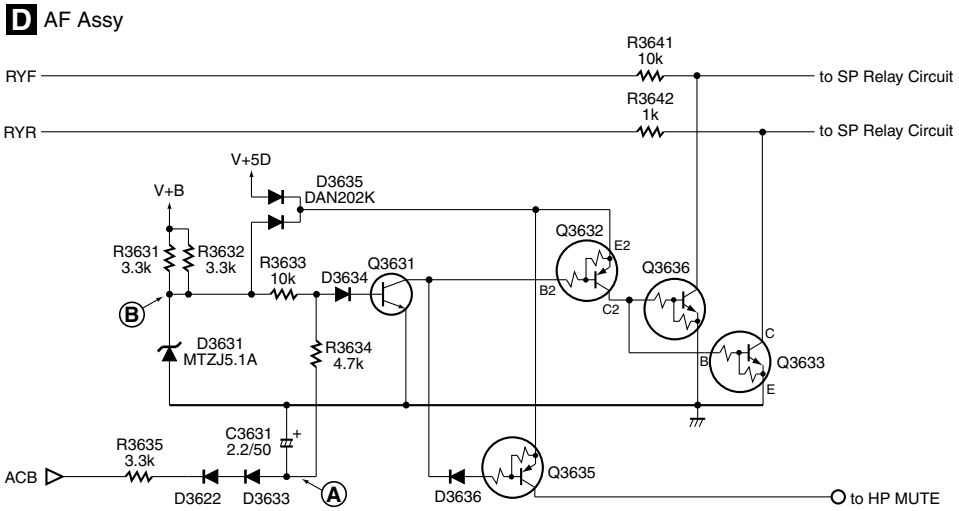
Status	Power	Voltage	Operation								VDET voltage
			Q923	Q924	Q922	Q921	D921	D922	Q926	Q925	
In Normal mode			off	off	off	off	off	off	off	off	Mid
When an abnormality is generat	VDVD+12	<1V	(on)	(on)	(on)	(off)	off	on	off	off	L
		>15.5V	off	off	off	off	off	off	on	on	L
	VPR+8	<5.2V	–	off	off	off	off	–	on	on	L
		>12.6V	–	on	on	on	on	–	off	off	H
	V+6	<3V	–	–	–	–	–	–	on	on	L
	V+5	<3.6V	–	off	off	off	off	–	on	on	L
		>6.6V	–	on	on	on	on	–	off	off	H
	V+3R3	<2.5V	–	–	–	–	–	–	–	–	L
		>4.25V	–	–	–	–	(on)	–	–	–	H

(2) When the VDET signal to the microcomputer is interrupted because of defective soldering of the 30-pin connector or incomplete insertion of FFC
→ The VDET level is lowered by the pull-down resistor (1 Mohms) on the side of the microcomputer.

■ Other protection circuit

AC detection circuit

This is a protection circuit that prevents popping sounds in the Speaker and Headphones output when the AC power cord is connected or disconnected.



- The voltage at Point Ⓐ is a DC voltage which has been generated by half-wave rectification on the minus side of the AC power.
- The voltage at Point Ⓑ is approx. 5 V.

- The base voltage at Q3631 is a voltage between Points Ⓐ and Ⓑ divided by R3633 and R3634. As this voltage is negative (-) in Normal mode, Q3631 is off.
  When the AC power cord is disconnected and there is no AC power input, the base voltage at Q3631 becomes +0.6 V or more, and Q3631 is turned on. Then, the operations below follow.

(1) SP Relay

Q3632 (E2, C2, B2), Q3633, and Q3636 (E, C, B) are turned on, the line to activate the SP relay becomes low level, and the SP Relay is turned off.

(2) HP MUTE

Q3635 is turned on, and the MUTE circuit for HP is turned on.

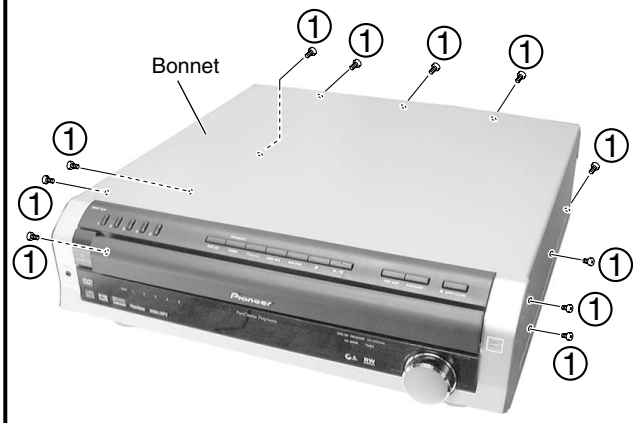
7.1.13 DISASSEMBLY

DIAGNOSIS OF PCBs

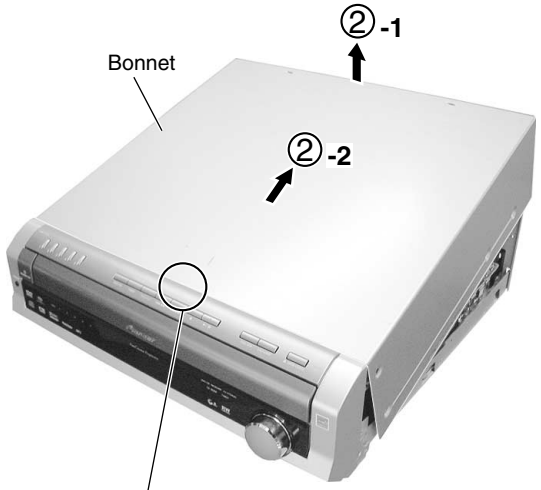
Note: For performing the diagnosis shown below, the following jig cables for service are required:
- GGD1160 (DV8 Only) • GGD1222 (HTD540 Only)
- GGD1228
- GGD1315 (×2)

1 Bonnet and Tray Cap

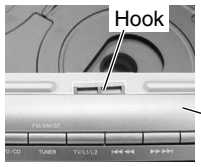
① Remove the eleven screws.



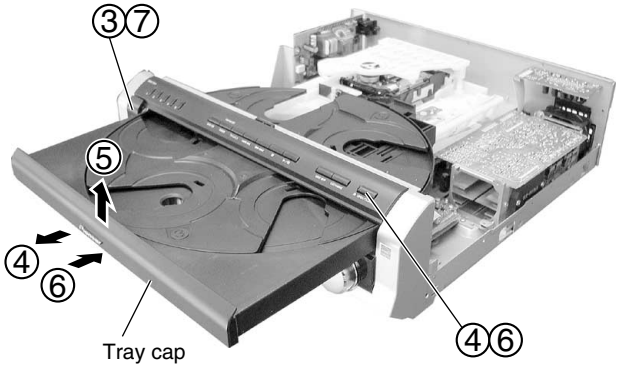
② Remove the bonnet.



Caution :
Remove the bonnet carefully because the hook of Front Panel Section may be damaged.
And be careful not to damage when installs it afain.



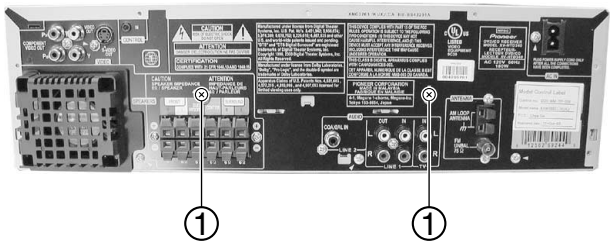
③ Press the ⏻ STANDBY/ON button to turn on the power.
④ Press the ⏏ OPEN/CLOSE button to open the tray.
⑤ Remove the tray cap.
⑥ Press the ⏏ OPEN/CLOSE button to close the tray.
⑦ Press the ⏻ STANDBY/ON button to turn off the power.



● How to open the Tray when the power cannot be on

① Remove the two screws.

● Rear view



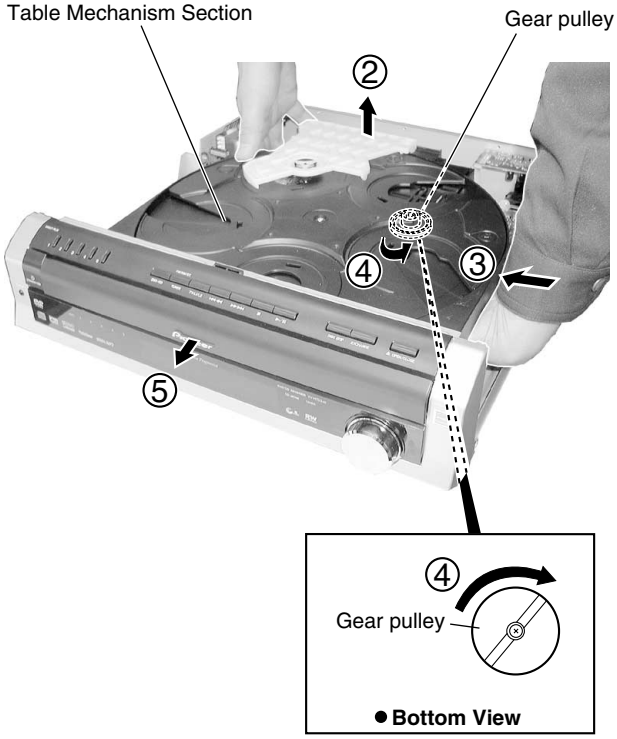
② Create a little gap between the main unit and the Table Mechanism Section by holding and pulling up the rear side of the Table Mechanism Section by hand.

③ Insert your hand through the gap below the Table Mechanism Section.

Note : When working, be careful not to injure yourself with a burr, etc..

④ Turn the gear pulley counterclockwise as viewed from the top.

⑤ If the tray pops out a little, fully pull it out by a hand.

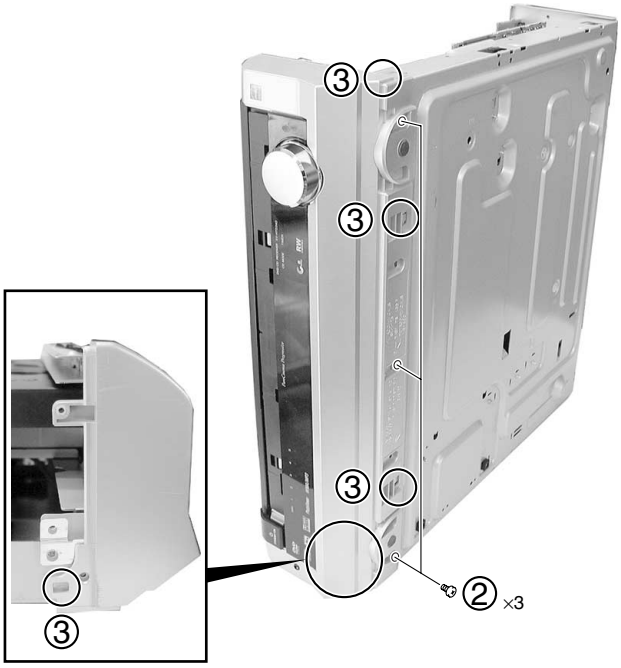


2 Front Panel Section

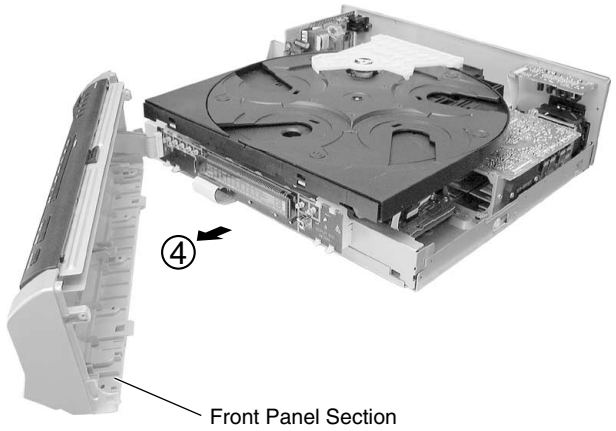
① Remove the bonnet and tray cap. (See Step 1.)

② Remove the three screws.

④ Unhook the four hooks.



④ Remove the Front Panel Section.

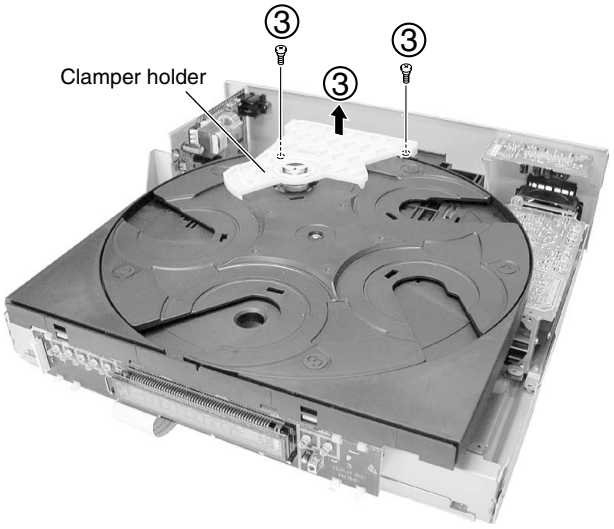


3 DVDM Assy

① Remove the bonnet and tray cap. (See Step 1.)

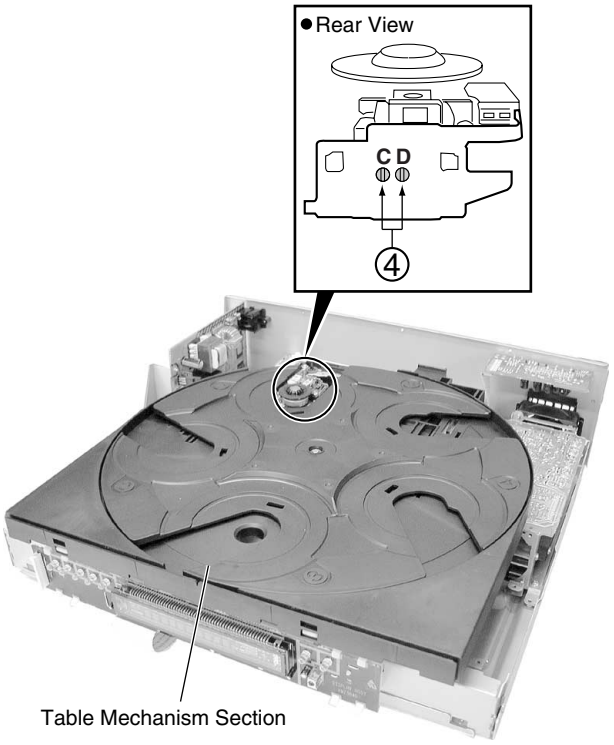
② Remove the Front Panel Section. (See Step 2.)

③ Remove the clamper holder by removing the two screws.

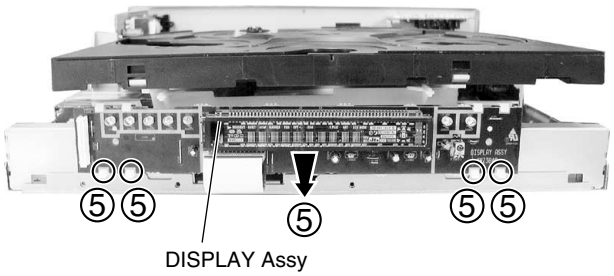


④ Short-circuit two points of C and D by soldering.

Note : After replacement, connect the flexible cable, then remove the soldered joint (open).



⑤ Remove the DISPLAY Assy by unhooking at the four points.

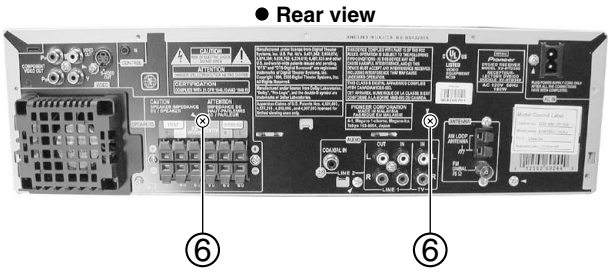


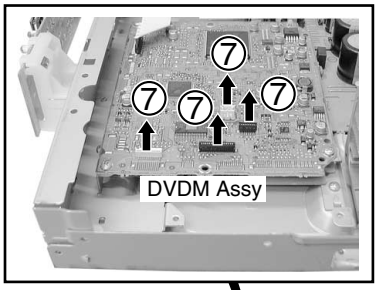
⑥ Remove the four screws.

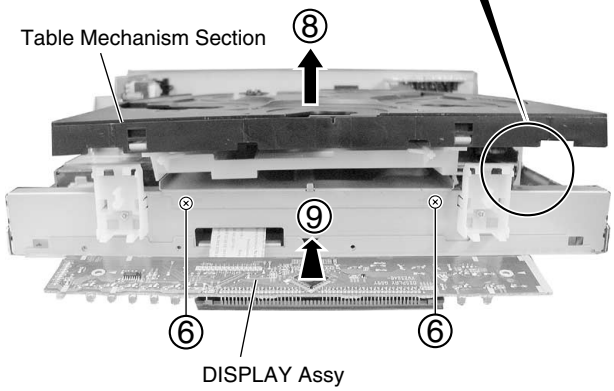
⑦ Disconnect the three flexible cables and the one connector.

⑧ Remove the Table Mechanism Section.

⑨ Reattach the DISPLAY Assy.







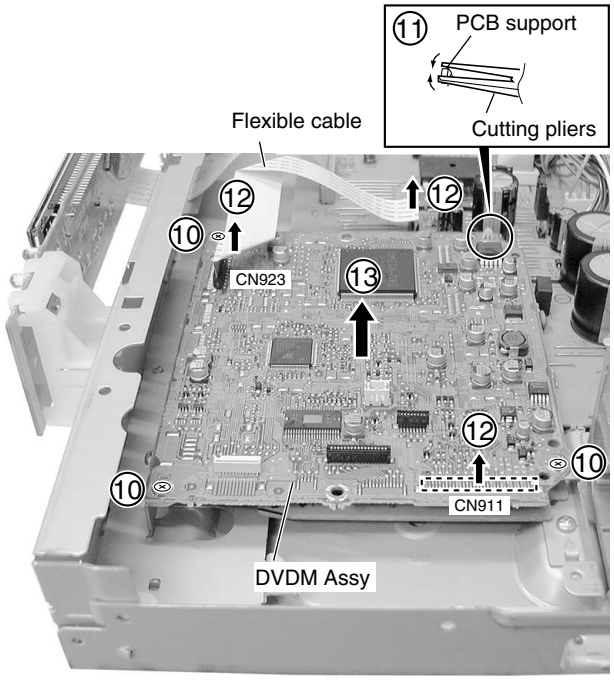
XV-DV8 Only

⑩ Remove the three screws.

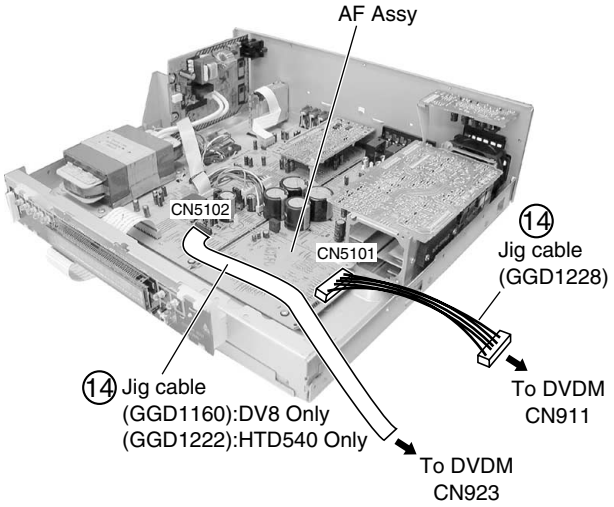
⑪ Remove the PCB support.

⑫ Remove the flexible cable and disconnect the connector.

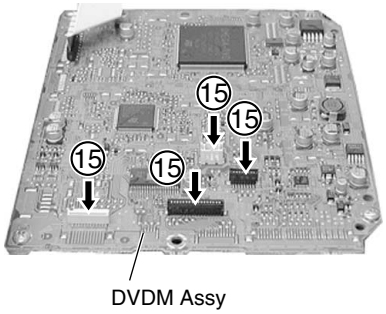
⑬ Remove the DVDM Assy.



⑭ Connect the two jig cables.



⑮ Reattatch the three flexible cables and the one connector from the Table Mechanism Section.



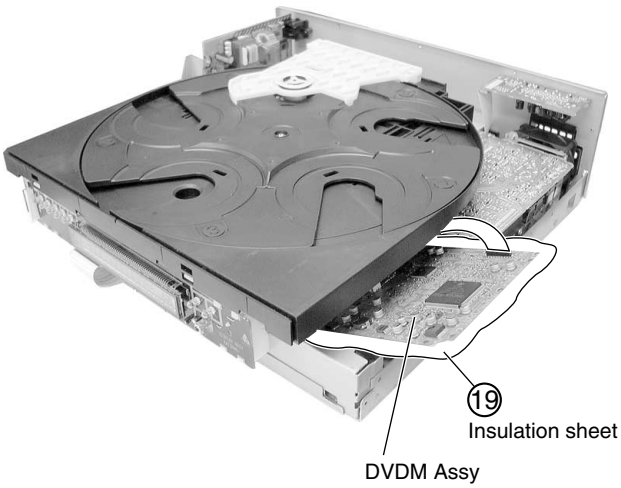
⑯ Reattatch the Table Mechanism Section.
(See Steps ⑨ to ⑤.)

⑰ Remove the soldered joint pickup short point.
(See Step ④.)

⑱ Reattatch the clamper holder by tighten the two screws.
(See Step ③.)

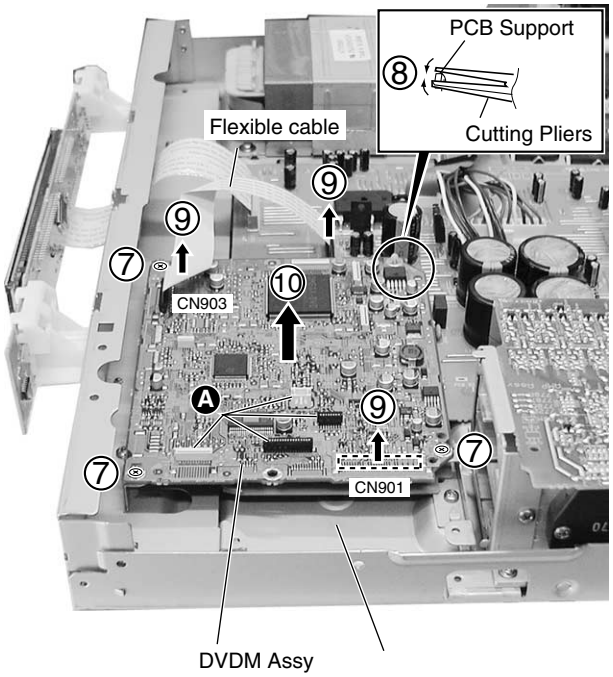
⑲ Insert the insulation sheet between the DVDM Assy and the chassis.

⑳ Arrange the cables as shown in the photo below.

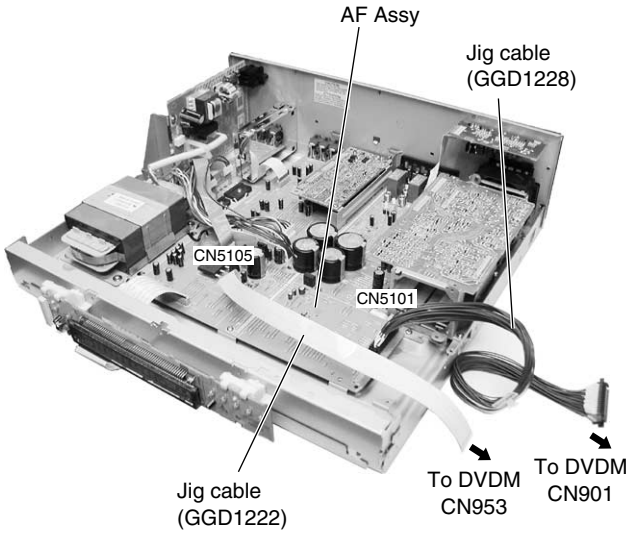


HTD540 0NLY

⑦ Remove the three screws.
⑧ Remove the PCB support.
⑨ Remove the flexible cable and disconnect the connector.
⑩ Remove the DVDM Assy.



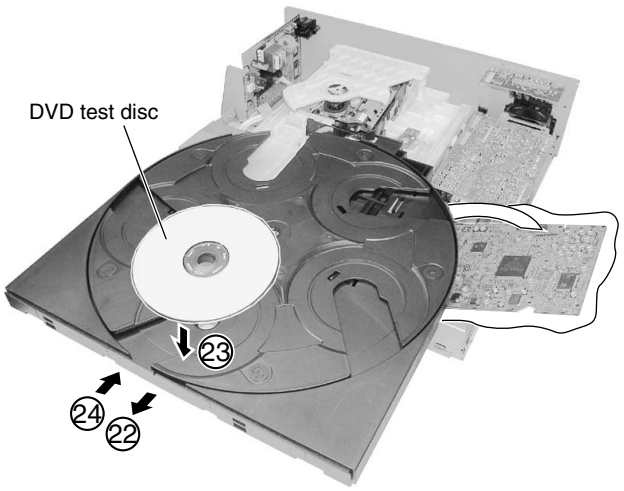
⑪ Connect the two jig cables.



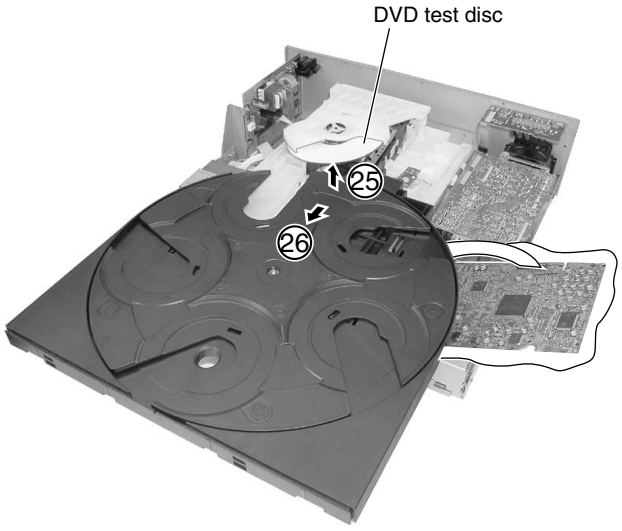
Note:
For clarity, in the photo above the flexible cables from the Table Mechanism Section are disconnected.
In the actual operation, keep these flexible cables (Ⓐ) connected.

⑫ Insert the insulation sheet between the DVDM Assy and the chassis.
⑬ Arrange the cables as shown in the photo below.

㉑ Press the ⏻ STANDBY/ON button to turn on the power.
㉒ Press the ⏏ OPEN/CLOSE button to open the tray.
㉓ Set the DVD test disc.
㉔ Press the ⏏ OPEN/CLOSE button to close the tray.



㉕ Press the ▶/❚❚ PLAY/PAUSE button.
(DVD test disc is clamped.)
㉖ Press the ⏏ OPEN/CLOSE button.
(Tray is opened.)

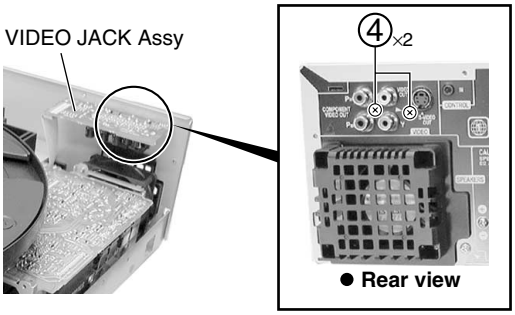


Diagnosis

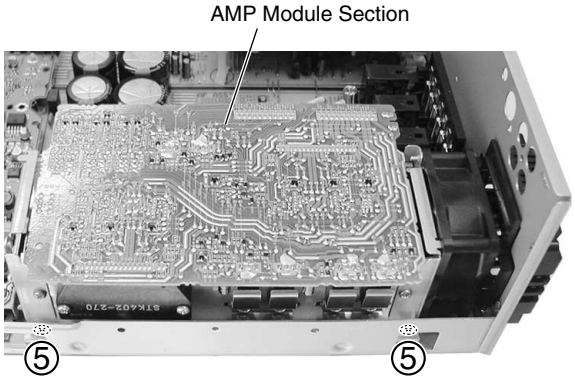
4 AMP Module Section

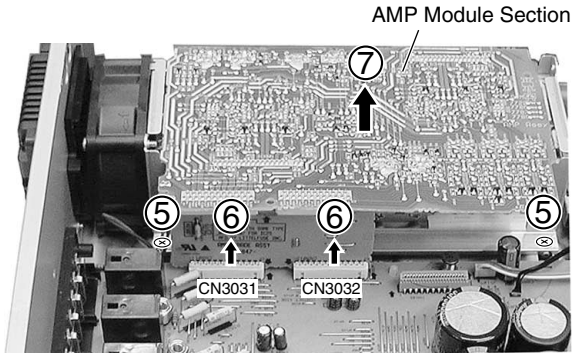
① Remove the bonnet and tray cap. (See Step 1.)
② Remove the Front Panel Section. (See Step 2.)
③ Remove the Table Mechanism Section. (See Step 3.)
(Do not disconnect the flexible cables that connects to the DVDM Assy.)

④ Remove the VIDEO JACK Assy by removing the two screws.

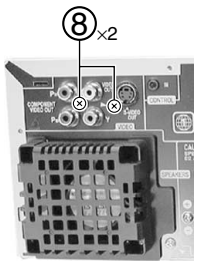


⑤ Remove the four screws.
⑥ Disconnect the two connectors.
⑦ Remove the AMP Module Section.





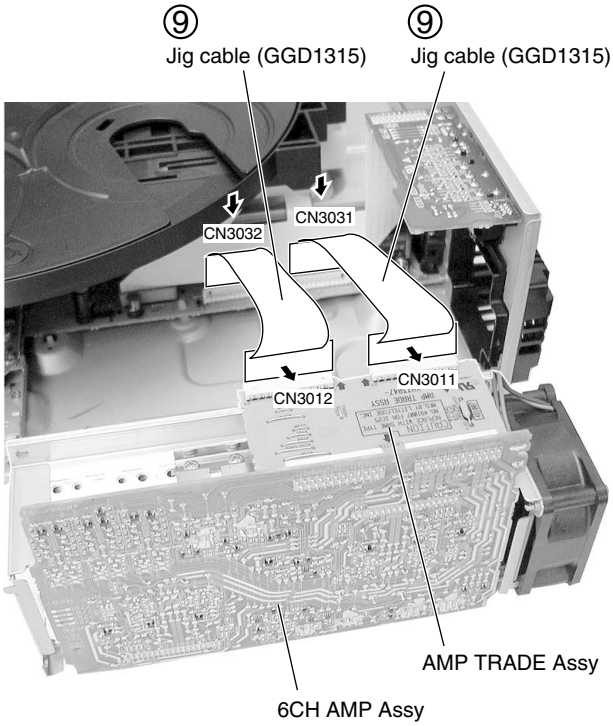
⑧ Reattatch the VIDEO JACK Assy by tighten the two screws.



● **Rear view**

⑨ Connect the two jig cables.

⑩ Arrange the cables as shown in the photo below.



Diagnosis

5 AF Assy

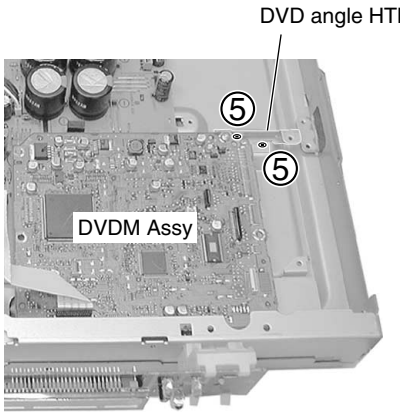
① Remove the bonnet and tray cap. (See Step 1.)

② Remove the Front Panel Section. (See Step 2.)

③ Remove the Table Mechanism Section. (See Step 3.)

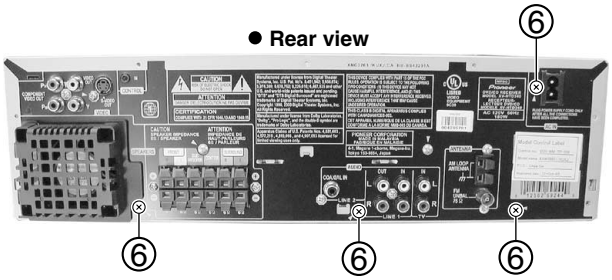
④ Remove the AMP Module Section. (See Step 4.)

⑤ Remove the DVD angle HTM by removing the two screws.



⑥ Remove the four screws.

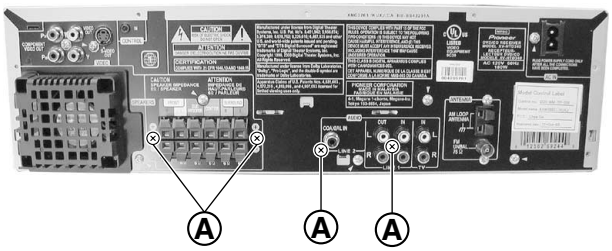
● **Rear view**



⚠ Note on handling the rear panel

During diagnosis, be sure NOT to remove the four screws marked Ⓐ in the above photo. This unit will damage if the Audio Output connectors and the Speaker Output connectors of the AF Assy are separated from the rear panel, because that would damage the ICs in circuit.

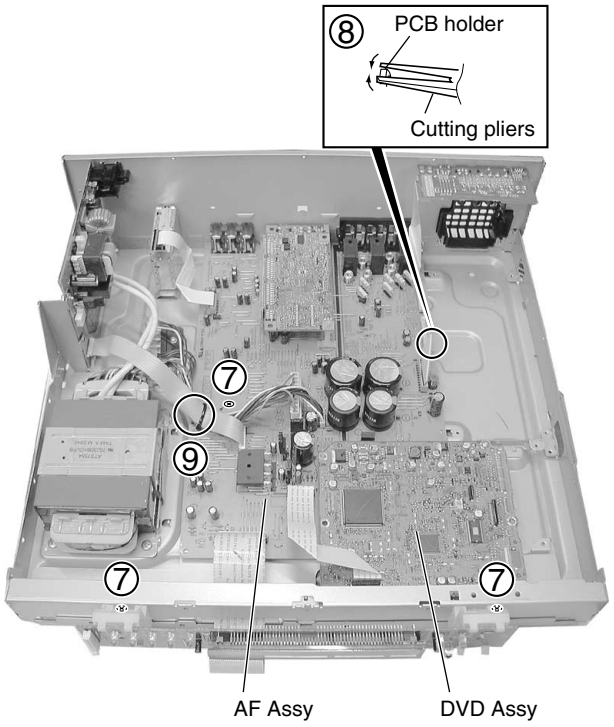
● **Rear view**



⑦ Remove the three screws.

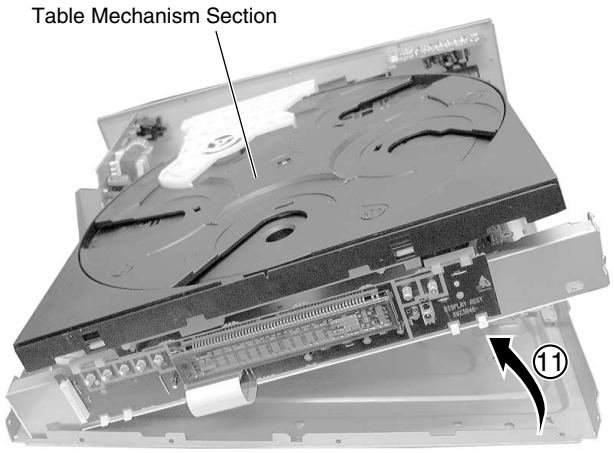
⑧ Remove the one PCB holder.

⑨ Loosen the cord holder.



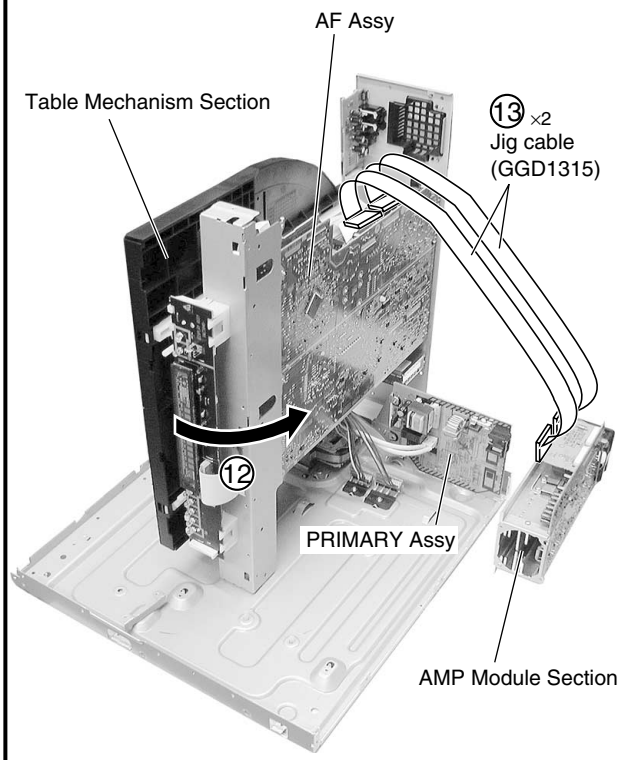
⑩ Reattach the Table Mechanism Section. (See Step 3.)
(Be sure to secure it in place with screws.)

⑪ Turn the AF Assy with the Table Mechanism Section attached to the upright position.



⑫ Arrange the cables as shown in the photo below.

⑬ Connect the AF Assy with the AMP Module Section using the two jig cables.



Diagnosis

TABLE MECHANISM SECTION

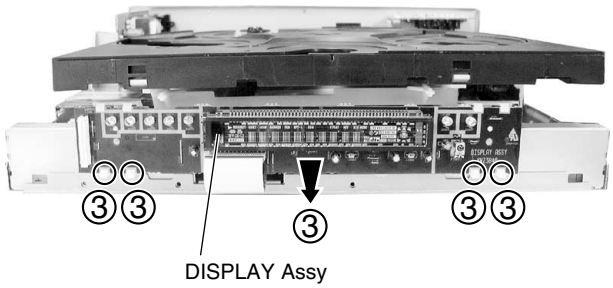
Traverse Mecha. Assy-S

Note : Be sure to set the Traverse Mechanism to Unclamp (down) mode.

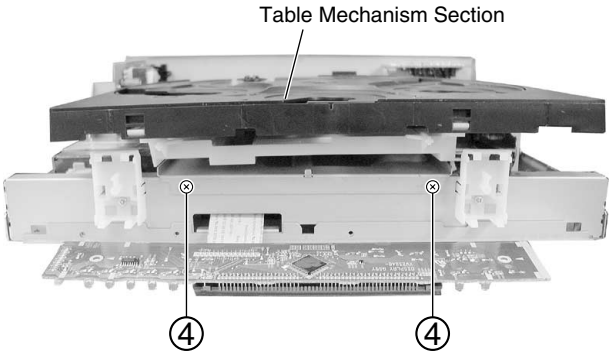
① Remove the bonnet and tray cap. (See Step 1.)

② Remove the Front Panel Section. (See Step 2.)

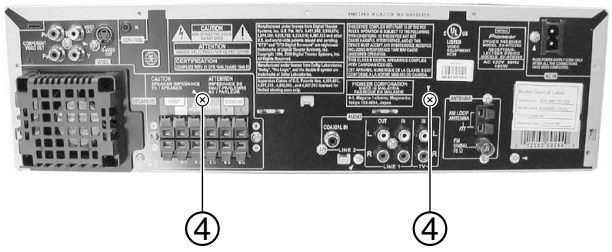
③ Remove the DISPLAY Assy by unhooking at the four points.



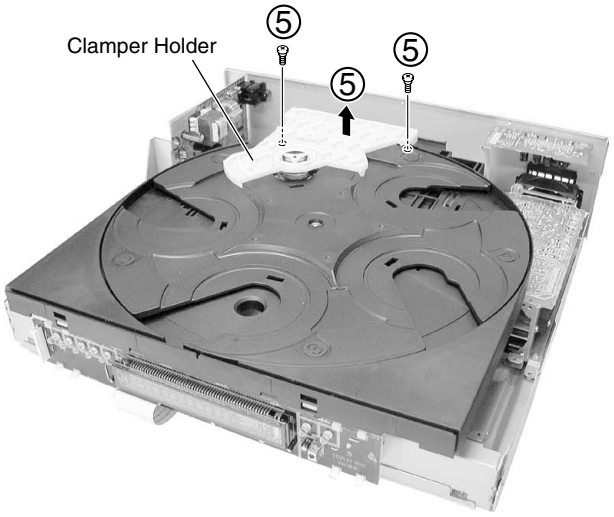
④ Remove the four screws.



● **Rear view**



⑤ Remove the clamper holder by removing the two screws.

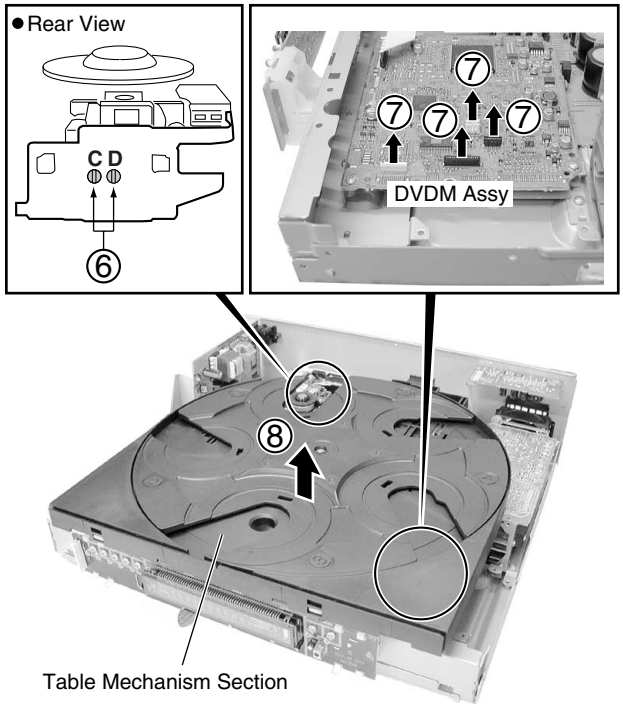


⑥ Short-circuit two points of C and D by soldering.

Note : After replacement, connect the flexible cable, then remove the soldered joint (open).

⑦ Disconnect the three flexible cables and the one connector.

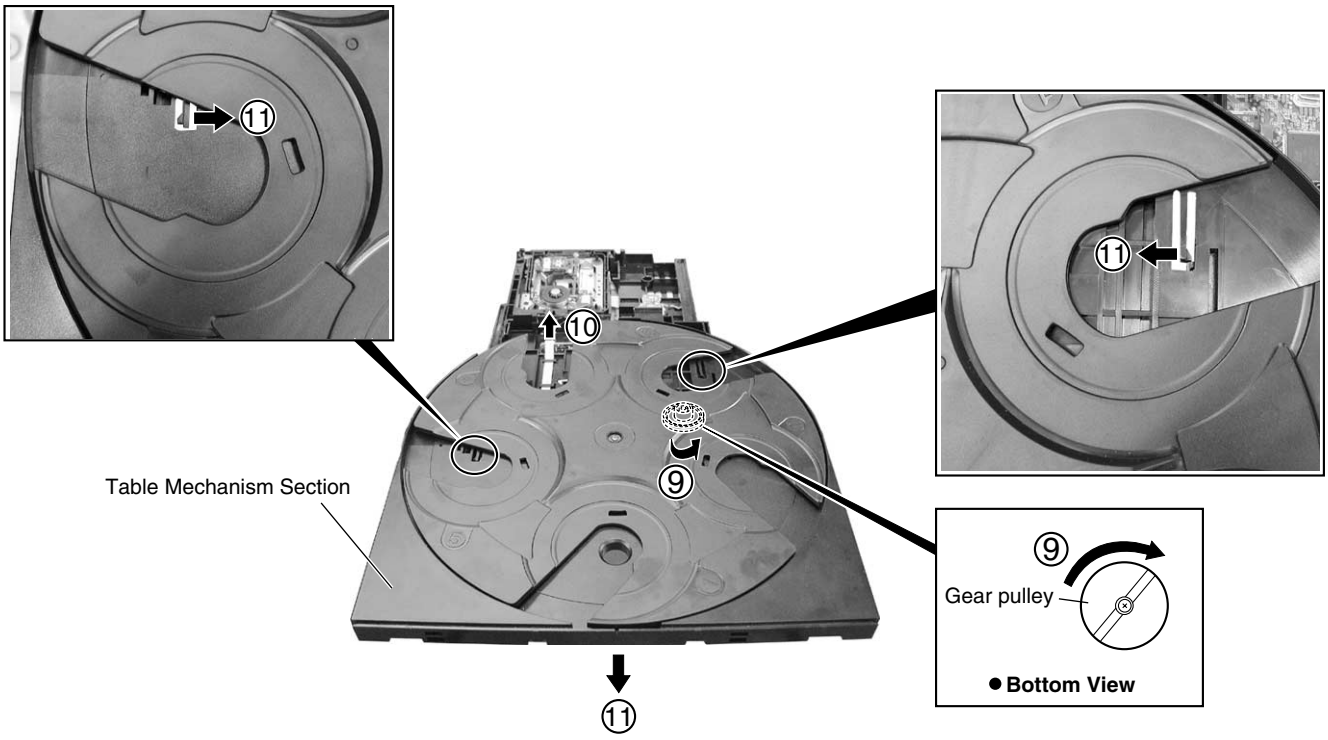
⑧ Remove the Table Mechanism Section.



⑨ Open the tray by turning the gear pulley counterclockwise viewed from the top.
(After the tray pops out a little, fully pull it out by hand.)

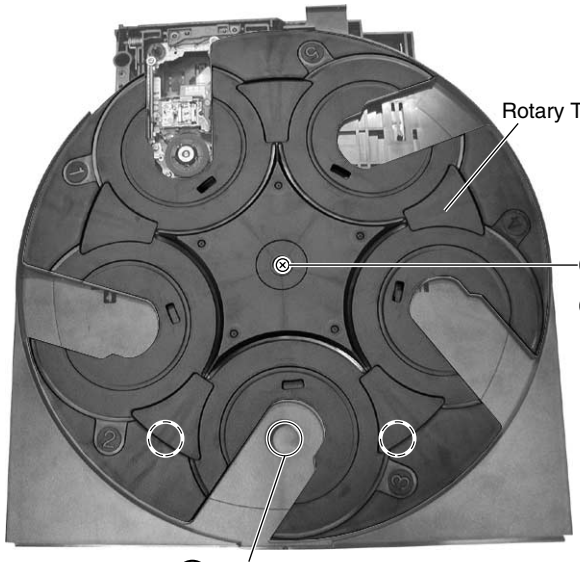
⑩ Disconnect the flexible cable.

⑪ Remove the Table Mechanism Section by unhooking at the two points.



● If the Table Mechanism Section cannot be removed

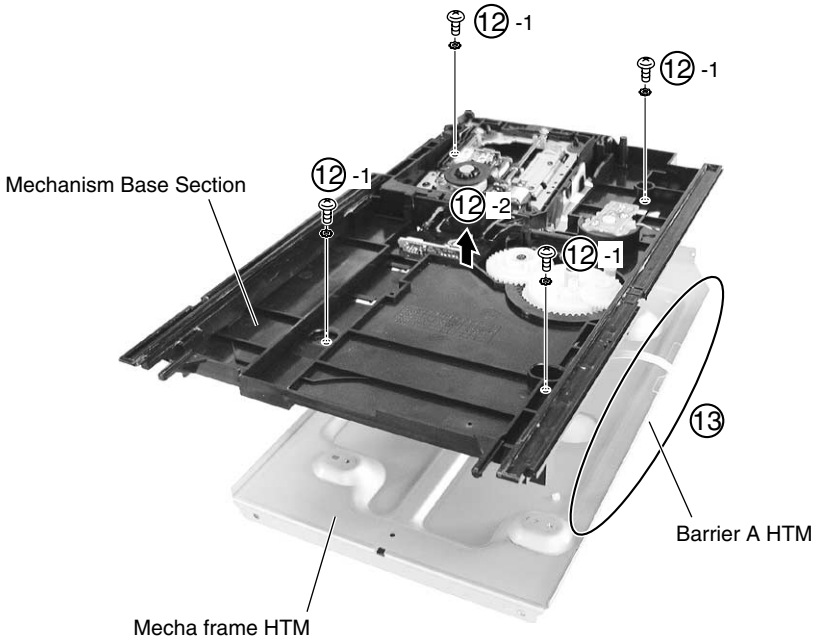
Displacement of the rotary tray may be the cause. (If this is the case, in Step ⑪ above, the two hooks cannot be seen, because they are covered by the rotary tray.)
In this case, set the rotary tray in the correct position, following the steps below.



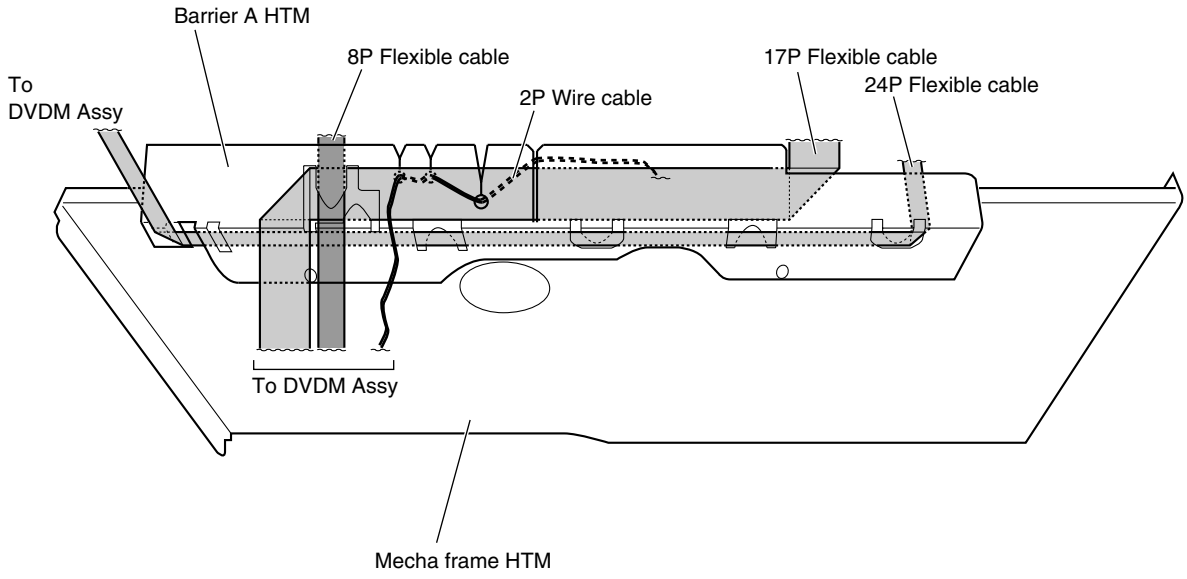
Note:
It is not necessary to set the Disc No. of the rotary tray, because the Automatic Disc No. Detection system will function.

⑫ Remove the Mechanism Base Section by removing the four screws.

⑬ Remove the flexible cables from the barrier A HTM.



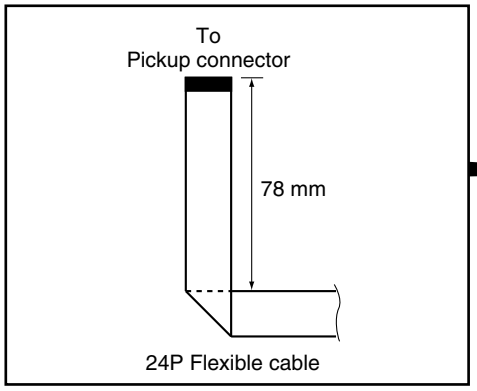
● **Arrangement of the flexible cables when reassembling**

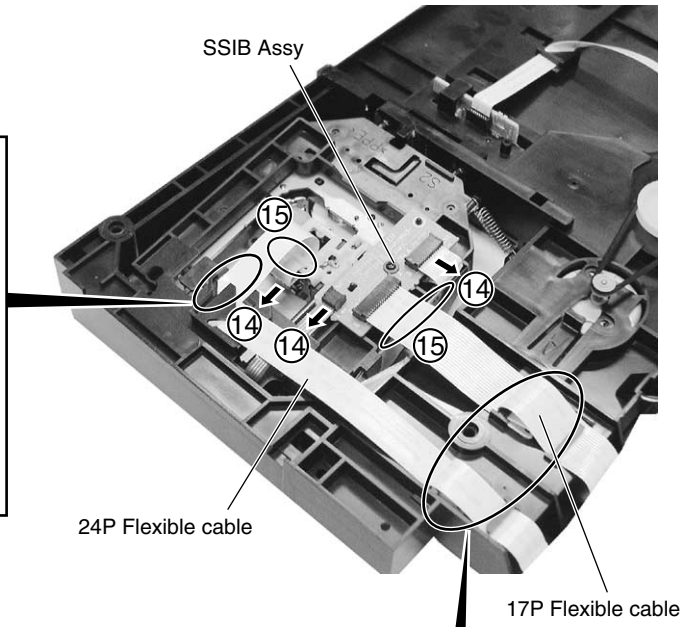


⑭ Remove the three flexible cables.

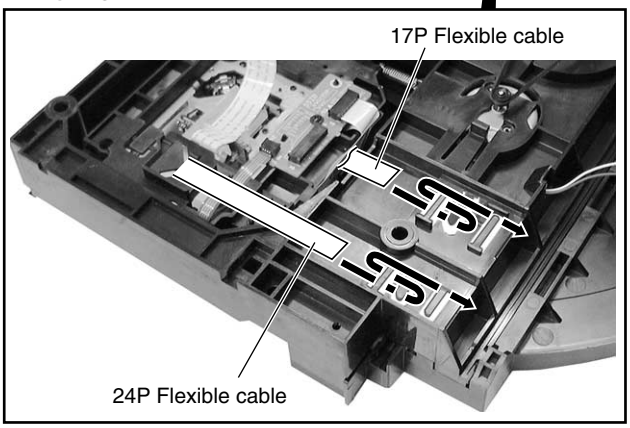
⑮ Set the arranged flexible cables out of the way.

● **Styling the Pickup flexible cable**



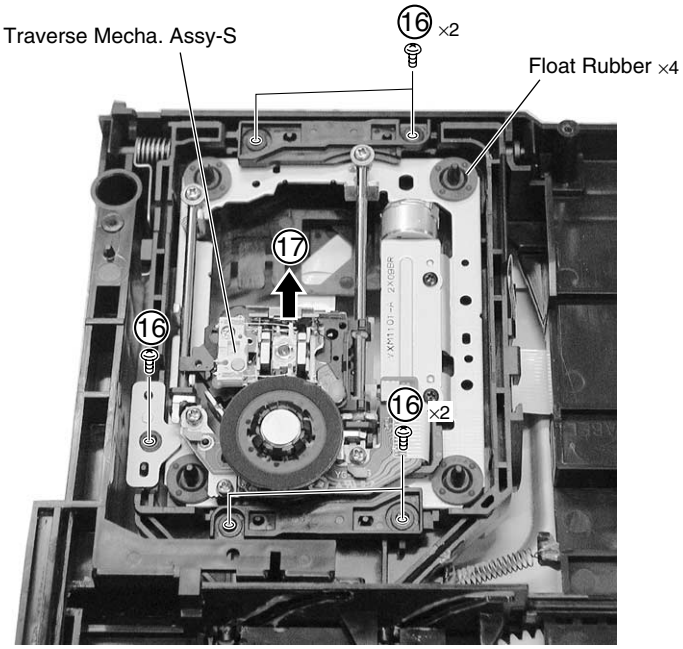


● **Styling the flexible cable installation**

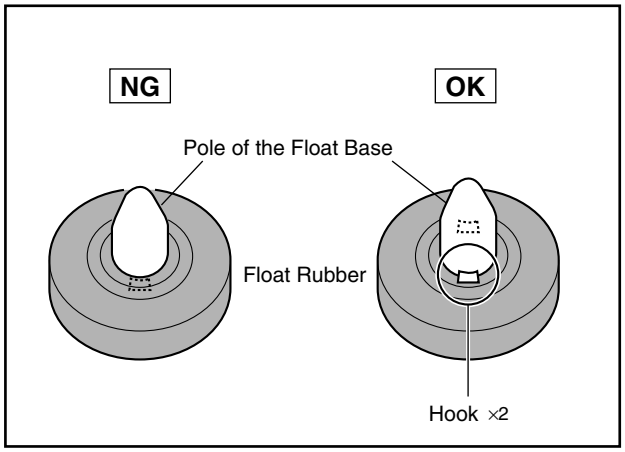


⑯ Remove the five screws.

⑰ Remove the Traverse Mecha. Assy-S.

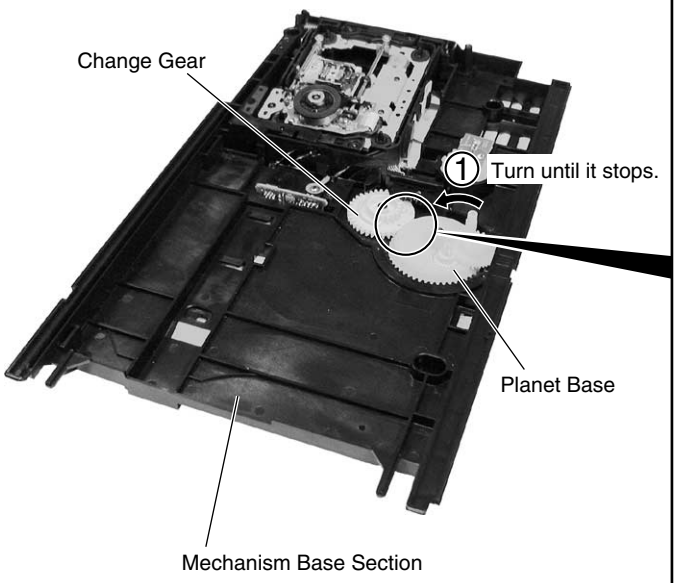


● **Note on the Float Rubber Installation**

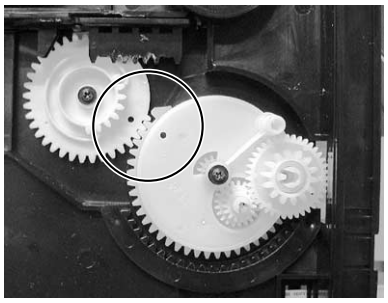


Procedures and Notes on Assembling the Table Mechanism Section

① Turn the planet base as shown below.

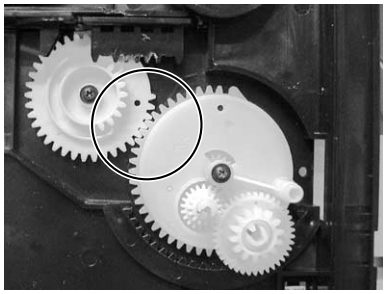


OK



If the first teeth (marked by dots) of the gears engage, it is OK.

NG

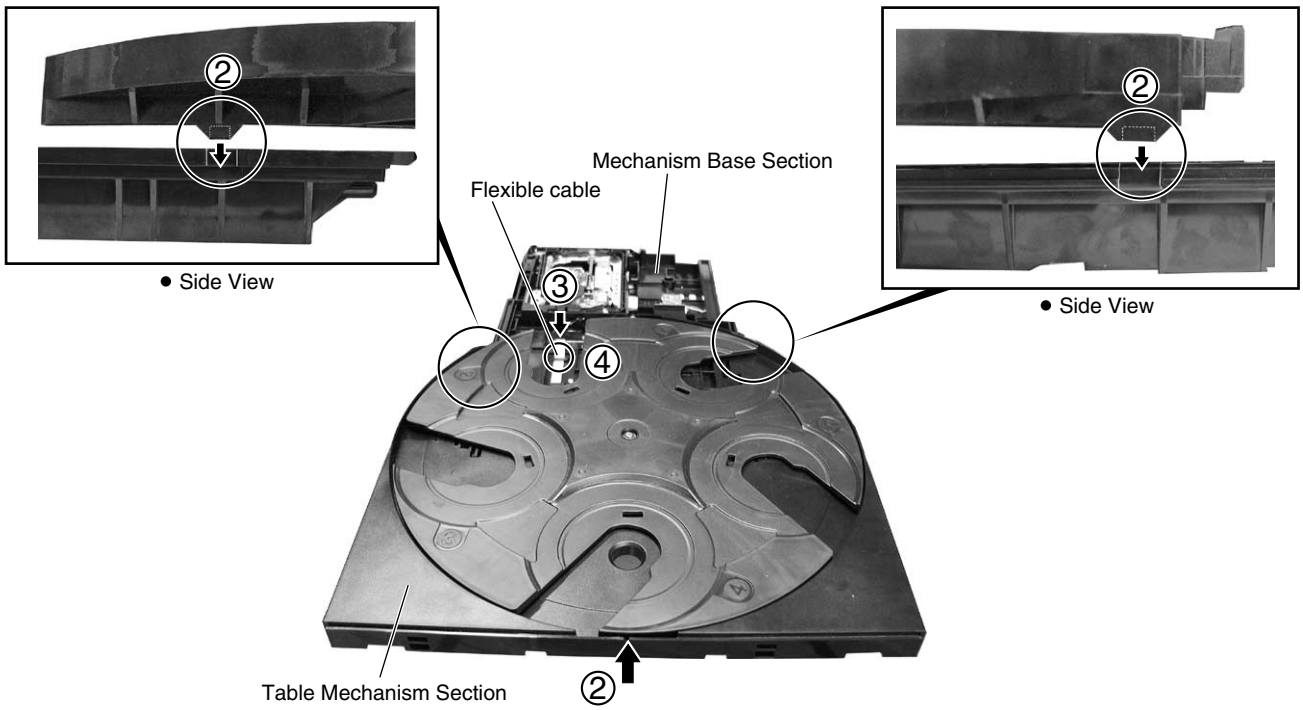


If the engaged teeth of the gears are displaced by two teeth or more, a strange sound is generated, and a problem occurs.

② Mount the Table Mechanism Section on the Mechanism Base Section.

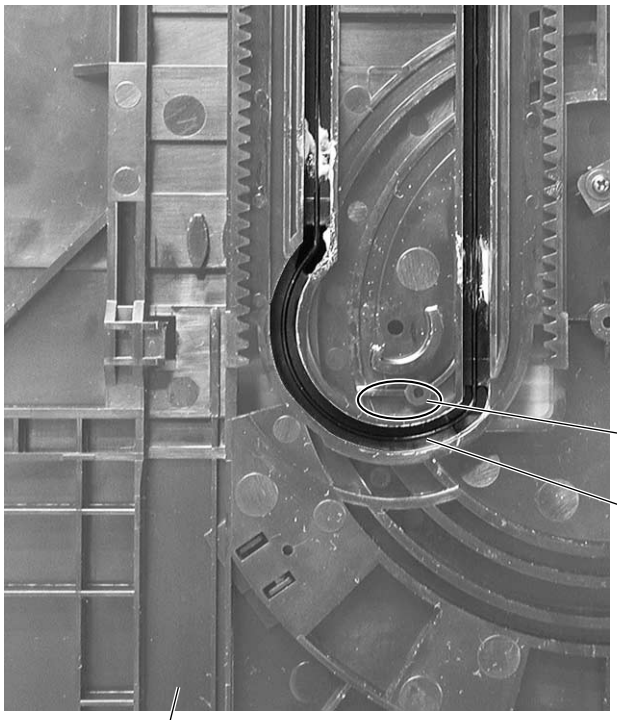
③ Connect the flexible cable.

④ Bring an extra flexible cable close to the front side.



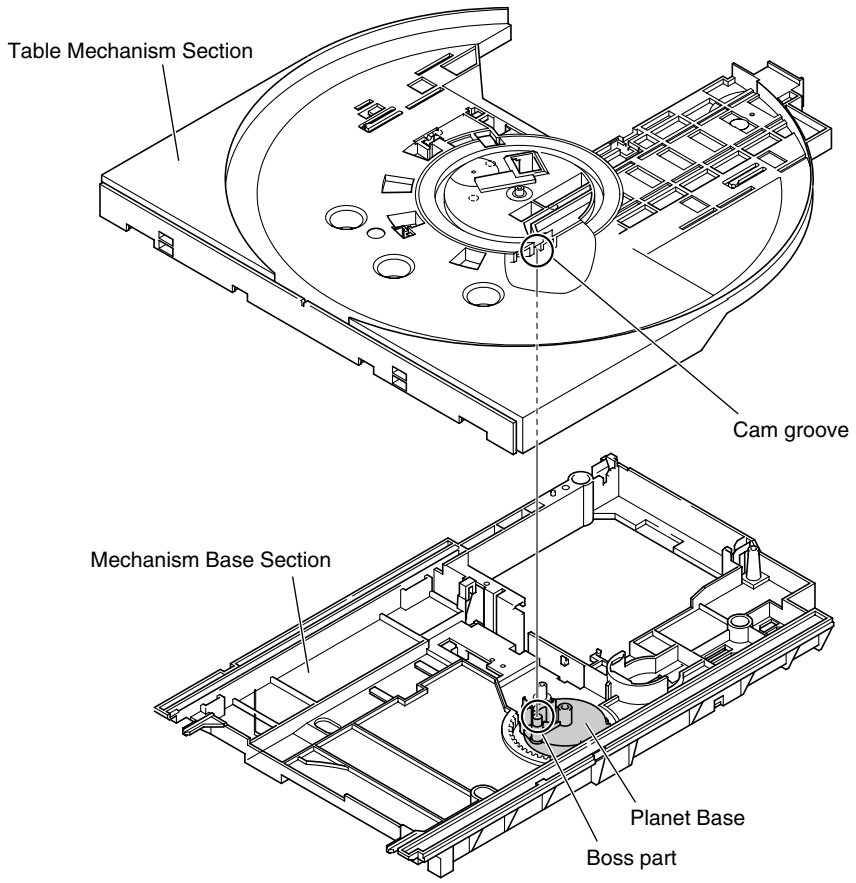
● How to repair when the Table Mechanism Section does not function

● Bottom View

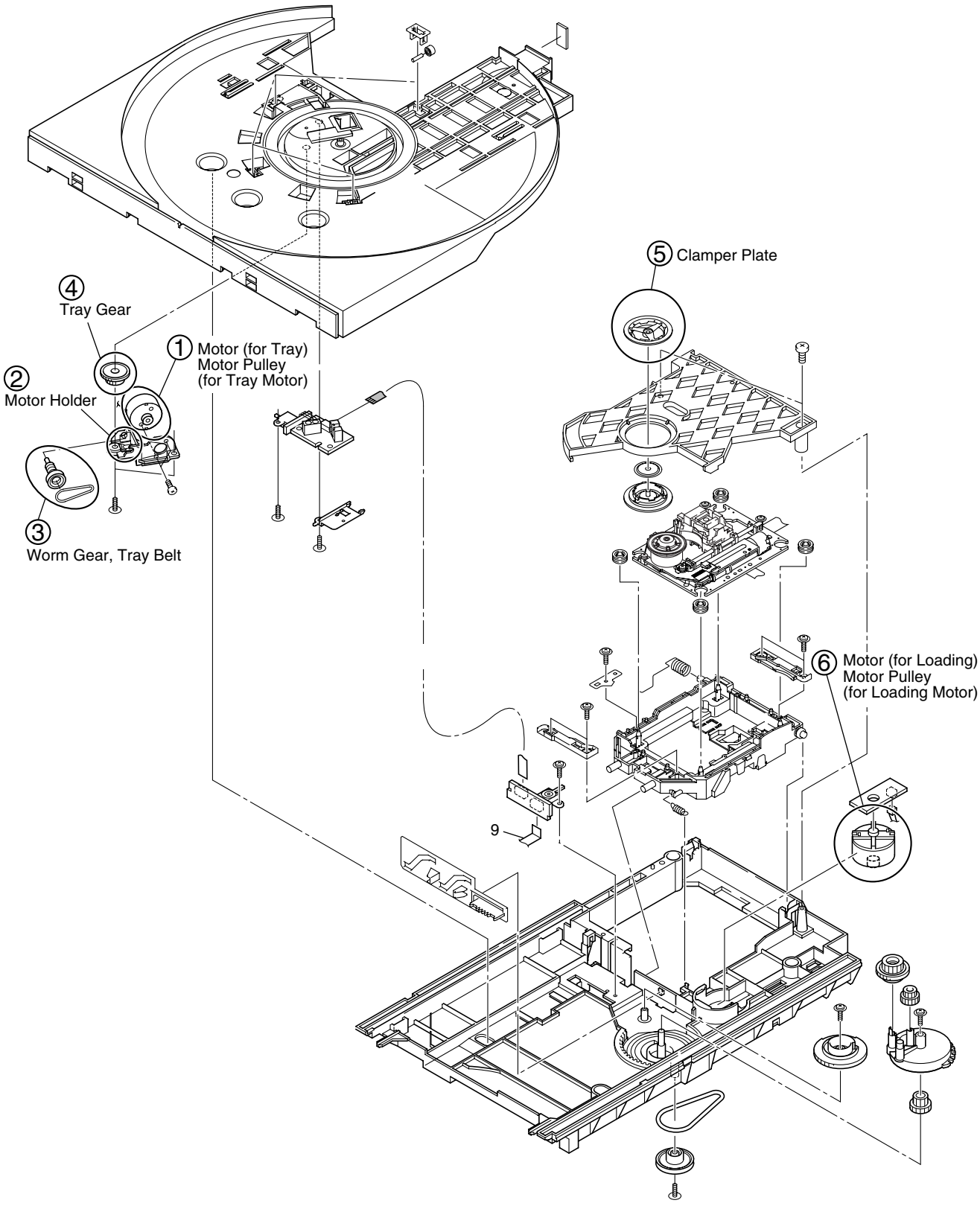

If the boss is set in this position, the unit does not operate correctly.
If the boss is set in the cam groove, the unit operates correctly.
Table Mechanism Section

Procedures:

1. Flex the Table Mechanism Section and the Mechanism Base Section slightly in opposite directions by pulling up on the Table Mechanism Section and pressing down on the Mechanism Base Section.
   When pressing down on the Mechanism Base Section, grip it near the planet base.
2. Flex the Table Mechanism Section until the boss of the planet base goes over the wall of the cam (by approx. 5 mm).
3. Set the boss of the planet base into the cam groove of the Table Mechanism Section.

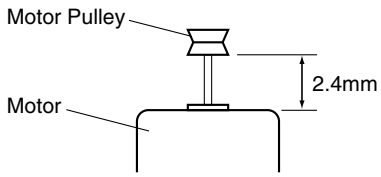


● Notes on Assembling the Mechanism Section

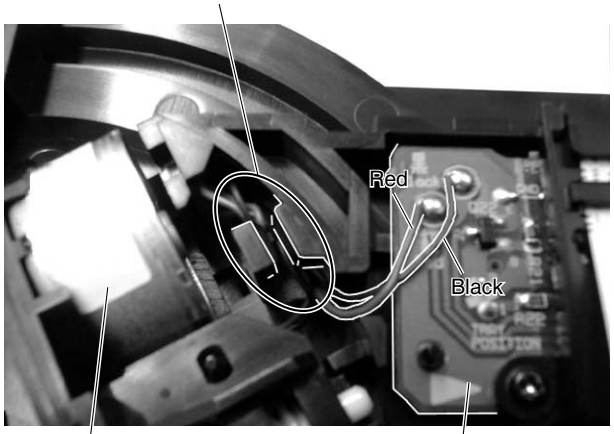


① Motor (for Tray), Motor Pulley (for Tray Motor)

Adjust the height of the motor pulley to 2.4mm.



Tuck the lead wires under the hook of the motor holder so that they do not disturb the tray's opening or closing.

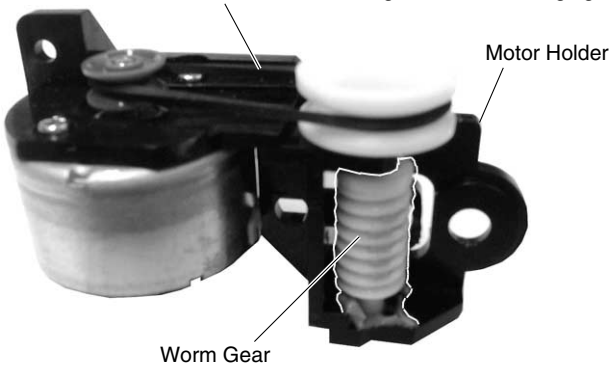


② Motor Holder

Apply lubricating oil (GYA1001) to the holder part.

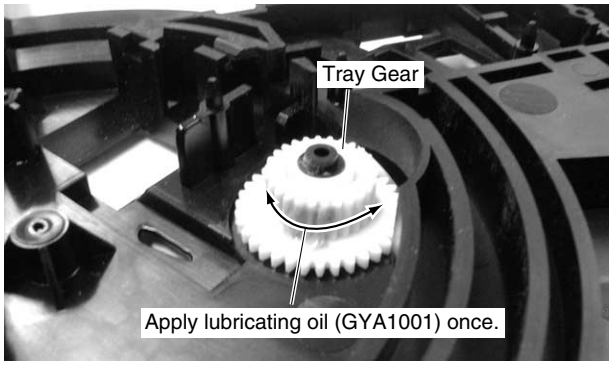
③ Worm Gear and Tray Belt

Tray Belt
Be carefull not to damage it when exchanging.



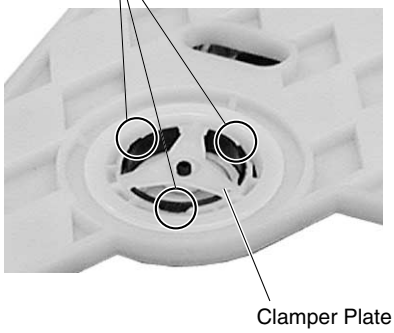
Apply lubricating oil (GYA1001) once.

④ Tray Gear



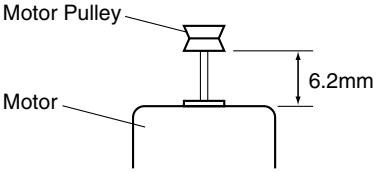
⑤ Clamper Plate

Apply adhesive on the inside of hooks.
(Prevention of dripping)



⑥ Motor (for Loading), Motor Pulley (for Loading Motor)

Adjust the height of the motor pulley to 6.2mm.



7.2 PARTS

7.2.1 IC

• The information shown in the list is basic information and may not correspond exactly to that shown in the schematic diagrams.

• List of IC

PDC113A, PT6302LQ-003

■ PDC113A (AF ASSY : IC5501)

• System Control Microcomputer

● Pin Functions

No.	Mark	Pin Name	I/O	Function
1	PA3/WR#	DVDON/OFF	O	Control power supply for DVD module
2	PA4/RD#	HPDET	I	Detection of the headphone insertion
3	PA5/RS	NC	O	NC
4	P70 / INT0 / T0LCP / AN8	ACPULSE	I	AC PULSE input (Interruption)
5	P71 / INT1 / T0HCP / AN9	NC	O	NC
6	P72 / INT2 / T0IN	NC	O	NC
7	P73 / INT3 / T0IN	REMOCON	I	REMOCON signal input (Interruption)
8	RES#	XRESET	I	µ-com reset input
9	XT1 / AN10	XT1	–	(When this port is not used, please connect VDD)
10	XT2 / AN11	XT2	–	(When this port is not used, please set open)
11	VSS1	VSS1	–	
12	CF1	CF1	–	
13	CF2	CF2	–	
14	VDD1	VDD1	–	
15	P80 / AN0	SIMUKE	I	Destination distinction input
16	P81 / AN1	MODEL	I	model distinction input
17	P82 / AN2	VDET	I	DVD 3.3V detection input
18	P83 / AN3	KEY1	I	Key1 input
19	P84 / AN4	KEY2	I	Key2 input
20	P85 / AN5	VOLJOG	I	Volume JOG Key
21	P86 / AN6	NC	I	NC
22	P87 / AN7	XPROTECT	O	Protection and Fan Error detection input
23	P10/SO0	SDATA	O	System bus data output (AMP side output)
24	P11 / SI0 / SB0	MDATA	I	System bus data input (AMP side input)
25	P12 / SCK0	SCLK	I	System bus clock input
26	P13 / SO1	SR+Tx	O	UART Tx of SR+ function
27	P14 / SI1 / SB1	SR+Rx	I	UART Rx of SR+ function
28	P15 / SCK1	NC	O	NC
29	P16/T1PWML	SYSCS2	O	Chip select 2 for system bus
30	P17/T1PWMH/BUZ	SYSCS1	O	Chip select 1 for system bus
31	PE0	XHPMUTE	O	HP MUTE ON/OFF
32	PE1	XRECMUTE	O	REC OUTPUT MUTE ON/OFF
33	PE2	XMUTEC	O	Cch MUTE ON/OFF
34	PE3	RYR	O	REAR RELAY ON/OFF
35	PE4	RYFSC	O	FRONT/SW/CENTER RELAY ON/OFF
36	PE5	(3/5 CONVERT)	O	3/5V convert control for SR+ function
37	PE6	TIMERLED	O	Control TIMER LED
38	PE7	(LEVELSHIFT)	O	VOL 0 - 5 : H
39	VSS4	VSS4		
40	VDD4	VDD4		

No.	Mark	Pin Name	I/O	Function
41	PF0	ATT10dB	O	Control ATT 10dB
42	PF1	ATT6dB	O	Control ATT 6dB
43	PF2	STEST	I	Set TEST MODE for Service
44	PF3	UTEST	I	Set UNIT CHECK for checker
45	PF4	DTSDMIX	O	Control of gain-up for dts down-mix
46	PF5	SWFMIX	O	Control for subwoofer mix
47	PF6	NC	I	(When this port is not used, please connect GND)
48	PF7	NC	I	(When this port is not used, please connect GND)
49	SI2P0/SO2	DSPDI	O	Data output to DSP(Motorola) and DIR, SIO2 : LSB first
50	SI2P1/SI2/SB2	DSPDO	I	Data input from DSP(Motorola)
51	SI2P2/SCK2	DSPCLK	O	Clock output to DSP(Motorola) and DIR
52	SI2P3/SCK20	TXCE	O	Chip enable for tuner LSI
53	PWM1	NC		NC
54	PWM0	NC		NC
55	VDD2	VDD2		
56	VSS2	VSS2		
57	P00	XFLRST	O	Reset for FL driver
58	P01	FLCS	O	Chip enable for FL driver
59	P02	FLCLK	O	Clock for FL driver
60	P03	FLDAT	O	Data for FL driver(serial data input)
61	P04	TXCLK	O	Clock for tuner LSI
62	P05	TXODATA	O	Data for tuner LSI
63	P06	EXPDATA	O	Data for expander of LED control
64	P07	EXPCLK	O	CLK for expander of LED control
65	P20/INT4/T1IN	NC	O	NC
66	P21/INT4/T1IN	TXIDATA	I	Input data from tuner LSI
67	P22/INT4/T1IN	DVDACK	I	Acknowledgement from DVD MODULE (Interruption)
68	P23/INT4/T1IN	XVMUTE	O	VIDEO MUTE request to DVD MODULE
69	P24/INT5/T1IN	DVDMUTE	I	Request of MUTE from DVD MODULE (Interruption)
70	P25/INT5/T1IN	AUDIOSELA	O	SW for AUDIO In DVD_A/SACD model
71	P26/INT5/T1IN	NC	O	NC
72	P27/INT5/T1IN	XWMUTE	O	WIRELESS MUTE request
73	P30	WSELA	O	WIRELESS OUTPUT SELECT A
74	P31	INPUTSELB	O	AUDIO INPUT SELECT B
75	P32	INPUTSELA	O	AUDIO INPUT SELECT A
76	P33	XTL0	O	Selection X'tal to DIR
77	P34	DIRERR	I	LOCK/UNLOCK from DIR
78	P35	DIRRST	O	Reset to DIR /CODEC
79	P36	DIRCS	O	Chip select to DIR/CODEC
80	PB7/D7	DIRDO	I	Data input from DIR/CODEC

No.	Mark	Pin Name	I/O	Function
81	PB6/D6	DSPMODE	O	MODE selection (ROM/RAM) to DSP (MOTOROLA)
82	PB5/D5	DSPHREQ	I	Error detection from DSP (MOTOROLA)
83	PB4/D4	NC	O	NC
84	PB3/D3	DSPSS	O	Slave selection to DSP (MOTOROLA)
85	PB2/D2	XDSPRST	O	RESET to DSP (MOTOROLA) MODULE
86	PB1/D1	DECMUTE	I	Detection of 1st DSP boot success from DSP MODULE
87	PB0/D0	XDSPMUTE	O	MUTE requeat to DSP MODULE
88	VSS3	VSS3	–	
89	VDD3	VDD3	–	
90	PC7/A7	PASSANDREW	O	Control for bypass Andrew circuit
91	PC6/A6	SYSPOW	O	Control power supply of system
92	PC5/A5	NC	O	NC
93	PC4/A4	XDVDRST	O	RESET to DVD MODULE
94	PC3/A3	XSYSMUTE	O	Control mute of system
95	PC2/A2	(VOLMUTE)	O	(Contorol mute of E-vol IC)
96	PC1/A1	VOLCLK	O	Clock for E-vol IC
97	PC0/A0	VOLDATA/CE	O	Data/CE for E-vol IC
98	PA0/CS2#	FLASHE/D	–	for FLASH writing
99	PA1/CS1#	FLASHDO	–	for FLASH writing
100	PA2/CS0#	FLASHCLK	–	for FLASH writing

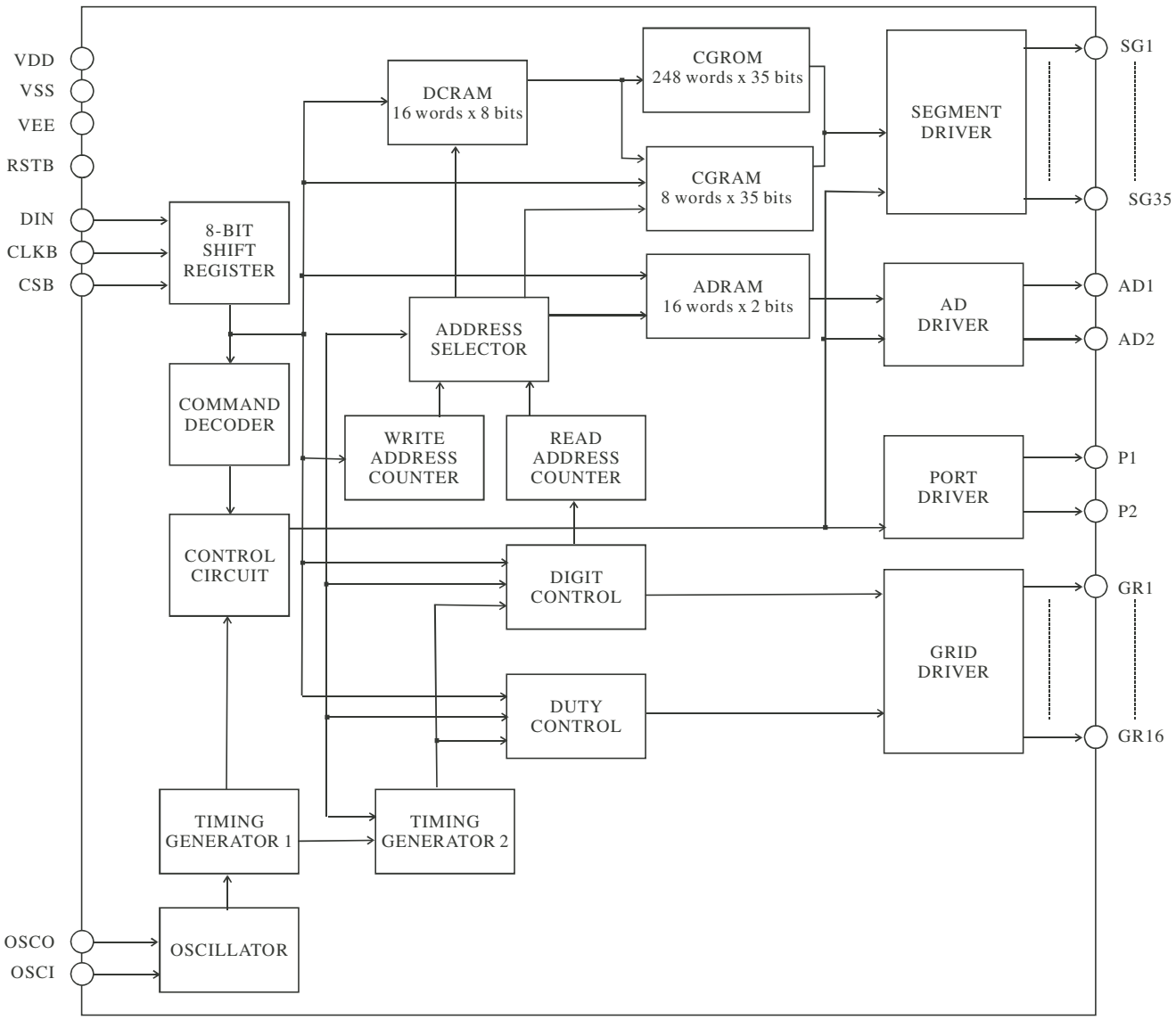
- Port0 (P00-P07) can be selected for input or output by each 4 bits (P00-P03,P04-P07). Set for input when reset. And it can be set C-MOS or Nch-OD by each 1 bit in option.
- Port1 (P10-P17) can be selected for input or output by each 1 bit. Set for input when reset. And it can be set C-MOS or Nch-OD by each 1bit in option.
- Port2 (P20-P27) can be selected for input or output by each 1 bit. Set for input when reset. And it can be set C-MOS or Nch-OD by each 1 bit in option.
- Port3 (P30-P36) can be selected for input or output by each 1 bit. Set for input when reset. And it can be set C-MOS or Nch-OD by each 1 bit in option.
- Port7 (P70-P73) can be selected for input or output by each 1 bit. Set for input when reset.
- Port8 (P80-P87) can be selected for input or output by each 1 bit. Set for input when reset.
- PortA (PA0-PA5) can be selected for input or output by each 1 bit. Set for input when reset. And it can be set C-MOS or Nch-OD by each 1 bit in option.
- PortB (PB0-PB7) can be selected for input or output by each 1 bit. Set for input when reset. And it can be set C-MOS or Nch-OD by each 1 bit in option.
- PortC (PC0-PC7) can be selected for input or output by each 1 bit. Set for input when reset. And it can be set C-MOS or Nch-OD by each 1 bit in option.
- PortE and PortF can be selected for input or output by each 2 bits.

- In case of without RDS, it is best that RDSDATA and RDSCLK are assigned as I/O port which can be set output and output low level.

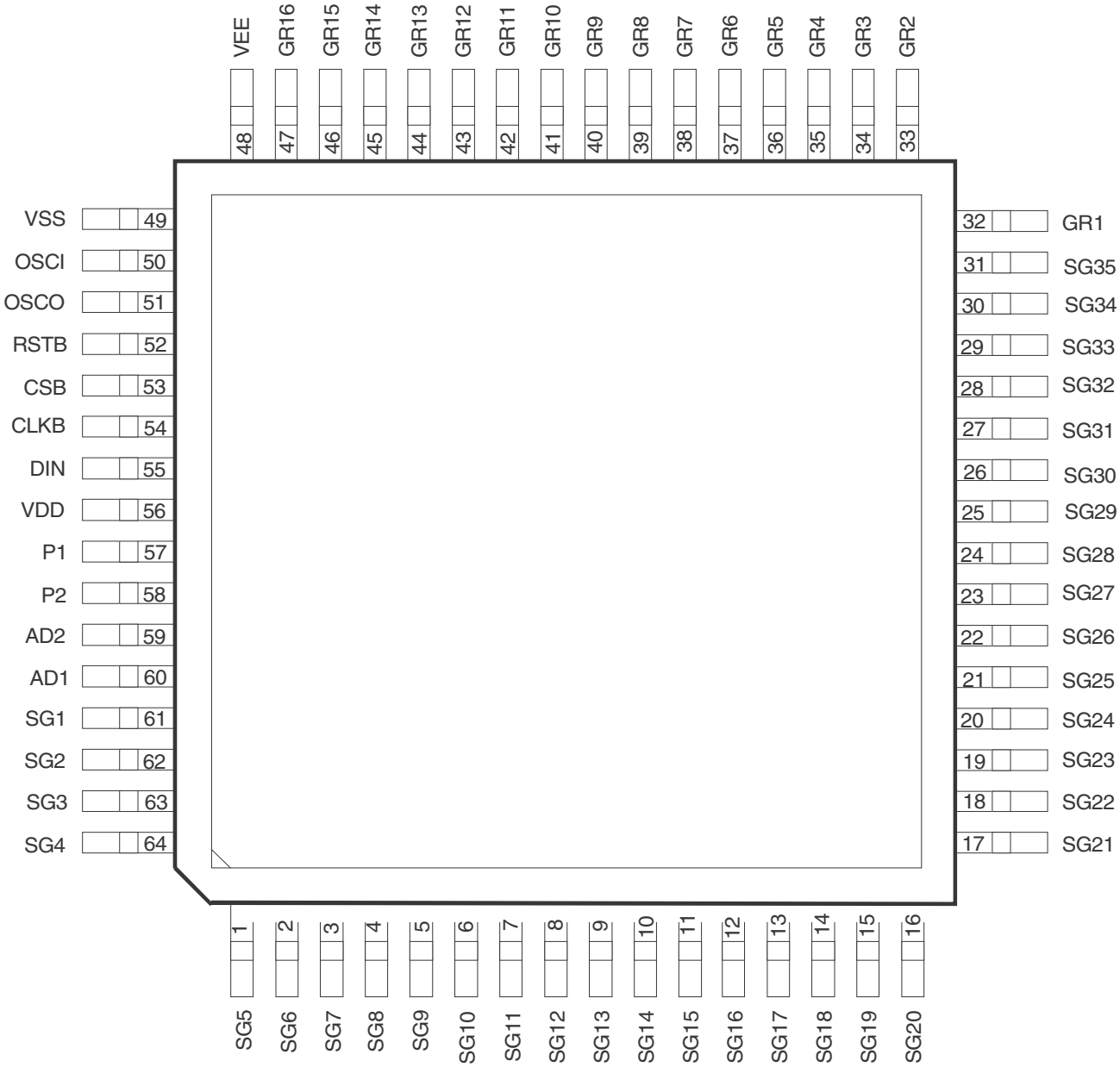
PT6302LQ-003 (DISPLAY ASSY : IC5601)

• FL Driver IC with character RAM

• BLOCK DIAGRAM



• **PIN LAYOUT**


VEE 48
GR16 47
GR15 46
GR14 45
GR13 44
GR12 43
GR11 42
GR10 41
GR9 40
GR8 39
GR7 38
GR6 37
GR5 36
GR4 35
GR3 34
GR2 33
VSS 49
OSCI 50
OSCO 51
RSTB 52
CSB 53
CLKB 54
DIN 55
VDD 56
P1 57
P2 58
AD2 59
AD1 60
SG1 61
SG2 62
SG3 63
SG4 64
32 GR1
31 SG35
30 SG34
29 SG33
28 SG32
27 SG31
26 SG30
25 SG29
24 SG28
23 SG27
22 SG26
21 SG25
20 SG24
19 SG23
18 SG22
17 SG21
1 SG5
2 SG6
3 SG7
4 SG8
5 SG9
6 SG10
7 SG11
8 SG12
9 SG13
10 SG14
11 SG15
12 SG16
13 SG17
14 SG18
15 SG19
16 SG20

• **PIN FUNCTION**

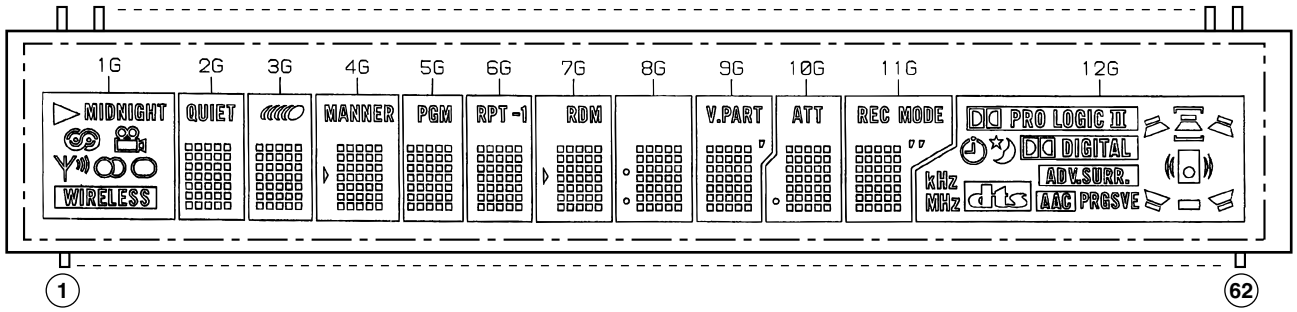
Pin Name	I/O	Description	Pin No. LQFP
SG5 to SG35 SG4 to SG1	O	Segment Driver Output Pin	1 ~ 31 64 ~ 61
GR1 to GR16	O	Grid Driver Output Pin	32 ~ 47
VEE	-	Power Supply	48
VSS	-	Ground Pin	49
OSCI	I	Oscillator Input Pin	50
OSCO	O	Oscillator Output Pin	51
RSTB	I	Reset Input Pin When this pin is set to "LOW", all functions are initialized.	52
CSB	I	Chip Select Input Pin When this pin is set to "High" Level, the serial data transfer is disabled.	53
CLKB	I	Shift Clock Input Pin The serial data is shifted at the rising edge of CLKB.	54
DIN	I	Serial Data Input Pin	55
VDD	-	Positive Power Supply	56
P1 to P2	O	General Purpose Output Pin	57 ~ 58
AD2 to AD1	O	Segment Driver Output Pin	59 ~ 60

7.2.2 DISPLAY

■ XAV3020 (DISPLAY ASSY :V5601)

• FL DISPLAY

● Pin Assignment



● Anode Connection

	1G	2G	3G	4G	5G	6G	7G	8G	9G	10G	11G	12G
P1	MIDNIGHT	1-1	1-1	1-1	1-1	1-1	1-1	1-1	1-1	1-1	1-1	PRO LOGIC II
P2	▷	2-1	2-1	2-1	2-1	2-1	2-1	2-1	2-1	2-1	2-1	
P3		3-1	3-1	3-1	3-1	3-1	3-1	3-1	3-1	3-1	3-1	
P4		4-1	4-1	4-1	4-1	4-1	4-1	4-1	4-1	4-1	4-1	DIGITAL
P5		5-1	5-1	5-1	5-1	5-1	5-1	5-1	5-1	5-1	5-1	S5
P6		1-2	1-2	1-2	1-2	1-2	1-2	1-2	1-2	1-2	1-2	S6
P7		2-2	2-2	2-2	2-2	2-2	2-2	2-2	2-2	2-2	2-2	S7
P8	WIRELESS	3-2	3-2	3-2	3-2	3-2	3-2	3-2	3-2	3-2	3-2	S8
P9	–	4-2	4-2	4-2	4-2	4-2	4-2	4-2	4-2	4-2	4-2	S4
P10	–	5-2	5-2	5-2	5-2	5-2	5-2	5-2	5-2	5-2	5-2	S3
P11	–	1-3	1-3	1-3	1-3	1-3	1-3	1-3	1-3	1-3	1-3	S2
P12	–	2-3	2-3	2-3	2-3	2-3	2-3	2-3	2-3	2-3	2-3	S1
P13	–	3-3	3-3	3-3	3-3	3-3	3-3	3-3	3-3	3-3	3-3	dts
P14	–	4-3	4-3	4-3	4-3	4-3	4-3	4-3	4-3	4-3	4-3	ADV.SURR.
P15	–	5-3	5-3	5-3	5-3	5-3	5-3	5-3	5-3	5-3	5-3	AAC
P16	–	1-4	1-4	1-4	1-4	1-4	1-4	1-4	1-4	1-4	1-4	PRGSVE
P17	–	2-4	2-4	2-4	2-4	2-4	2-4	2-4	2-4	2-4	2-4	kHz
P18	–	3-4	3-4	3-4	3-4	3-4	3-4	3-4	3-4	3-4	3-4	MHz
P19	–	4-4	4-4	4-4	4-4	4-4	4-4	4-4	4-4	4-4	4-4	–
P20	–	5-4	5-4	5-4	5-4	5-4	5-4	5-4	5-4	5-4	5-4	–
P21	–	1-5	1-5	1-5	1-5	1-5	1-5	1-5	1-5	1-5	1-5	–
P22	–	2-5	2-5	2-5	2-5	2-5	2-5	2-5	2-5	2-5	2-5	–
P23	–	3-5	3-5	3-5	3-5	3-5	3-5	3-5	3-5	3-5	3-5	–
P24	–	4-5	4-5	4-5	4-5	4-5	4-5	4-5	4-5	4-5	4-5	–
P25	–	5-5	5-5	5-5	5-5	5-5	5-5	5-5	5-5	5-5	5-5	–
P26	–	1-6	1-6	1-6	1-6	1-6	1-6	1-6	1-6	1-6	1-6	–
P27	–	2-6	2-6	2-6	2-6	2-6	2-6	2-6	2-6	2-6	2-6	–
P28	–	3-6	3-6	3-6	3-6	3-6	3-6	3-6	3-6	3-6	3-6	–
P29	–	4-6	4-6	4-6	4-6	4-6	4-6	4-6	4-6	4-6	4-6	–
P30	–	5-6	5-6	5-6	5-6	5-6	5-6	5-6	5-6	5-6	5-6	–
P31	–	1-7	1-7	1-7	1-7	1-7	1-7	1-7	1-7	1-7	1-7	–
P32	–	2-7	2-7	2-7	2-7	2-7	2-7	2-7	2-7	2-7	2-7	–
P33	–	3-7	3-7	3-7	3-7	3-7	3-7	3-7	3-7	3-7	3-7	–
P34	–	4-7	4-7	4-7	4-7	4-7	4-7	4-7	4-7	4-7	4-7	–
P35	–	5-7	5-7	5-7	5-7	5-7	5-7	5-7	5-7	5-7	5-7	–
P36	–	QUIET		MANNER	PGM	RPT	RDM	col1	V.PART	ATT	REC MODE	–
P37	–	–	–	▷	–	-1	▷	col2	▽	col3	▽ ▽	–

● Pin Connection

Pin No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
Connection	F1	NX	NP	NP	12G	11G	10G	9G	8G	7G	6G	5G	4G	3G	2G	1G	P35	P34	P33	P32	P31
Pin No.	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42
Connection	P30	P29	P28	P27	P26	P25	P24	P23	P22	P21	NX	NX	NX	NX	NX	P20	P19	P18	P17	P16	P15
Pin No.	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	
Connection	P14	P13	P12	P11	P10	P9	P8	P7	P6	P5	P4	P3	P2	P1	P37	P36	NP	NP	NX	F2	

Note

(1) F1, F2 : Filament
(2) NP : No pin
(3) NX : No extend pin
(4) DL : Datum Line
(5) 1G to 12G : Grid

7.2.3 DISC / CONTENT FORMAT PLAYBACK COMPATIBILITY

Disc / content format playback compatibility

This player is compatible with a wide range of disc types (media) and formats. Playable discs will generally feature one of the following logos on the disc and/or disc packaging. Note however that some disc types, such as recordable CD and DVD, may be in an unplayable format—see below for further compatibility information.

DVD-Video DVD-R DVD-RW

Audio CD Video CD CD-R CD-RW

Fujicolor CD

- KODAK Picture CD
- *is a trademark of Fuji Photo Film Co. Ltd.*

CD-R/RW compatibility

- This system will play CD-R and CD-RW discs recorded in CD Audio or Video CD format, or as a CD-ROM containing MP3, WMA or JPEG files. However, any other content may cause the disc not to play, or create noise/distortion in the output.
- This system cannot record CD-R or CD-RW discs.
- Unfinalized CD-R/RW discs recorded as CD Audio can be played, but the full Table of Contents (playing time, etc.) will not be displayed.

DVD-R/RW compatibility

- Compatible formats: DVD-Video, Video Recording (VR)*
  * *Edit points may not play exactly as edited; screen may go momentarily blank at edited points.*
- Unfinalized playback: No
- WMA/MP3/JPEG file playback on DVD-R/RW: No

PC-created disc compatibility

Discs recorded using a personal computer may not be playable in this unit due to the setting of the application software used to create the disc. In these particular instances, check with the software publisher for more detailed information.

Discs recorded in packet write mode (UDF format) are not compatible with this player.

Check the DVD-R/RW or CD-R/RW software disc boxes for additional compatibility information.

Compressed audio compatibility

- Compatible formats: MPEG-1 Audio Layer 3 (MP3), Windows Media Audio (WMA)
- Sampling rates: 32, 44.1 or 48kHz
- Bit-rates: Any (128Kbps or higher recommended)
- VBR (variable bit rate) MP3 playback: Yes
- VBR WMA playback: No
- WMA lossless encoding compatible: No
- DRM (Digital Rights Management) compatible: Yes (DRM-protected audio files will *not* play in this player).
- File extensions: .mp3 , .wma (these must be used for the player to recognize MP3 and WMA files – do not use for other file types)
- File structure: Up to 999 files per folder

About WMA

The Windows Media® logo printed on the box indicates that this player can playback Windows Media Audio content.

WMA is an acronym for Windows Media Audio and refers to an audio compression technology developed by Microsoft Corporation. WMA content can be encoded by using Windows Media® Player version 7, 7.1, Windows Media® Player for Windows® XP, or Windows Media® Player 9 Series.

Microsoft, Windows Media, and the Windows logo are trademarks, or registered trademarks of Microsoft Corporation in the United States and/or other countries.

JPEG file compatibility

- Compatible formats: Baseline JPEG and EXIF 2.1* still image files up to 8 megapixels are supported (maximum resolution is 5120 x 5120 pixels).
  * *File format used by digital still cameras*
- File extensions: .jpg (must be used for the player to recognize JPEG files – do not use for other file types)
- File structure: Up to 999 files per folder

7.2.4 CLEANING

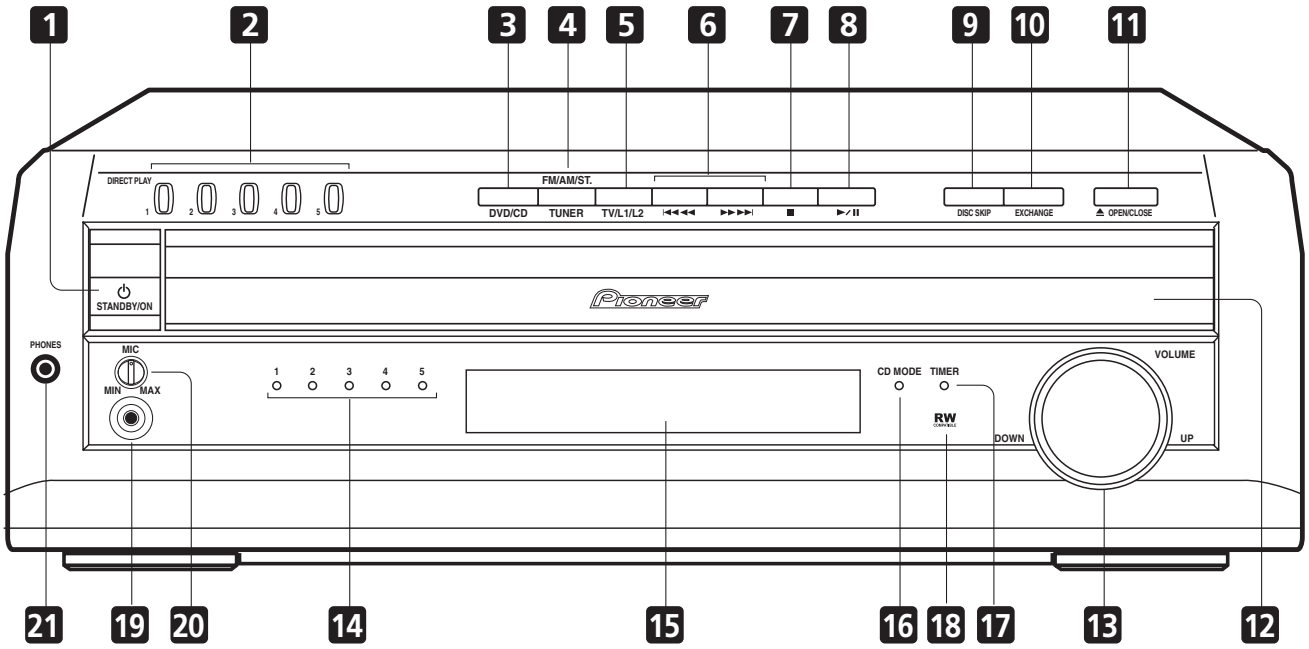
Before shipping out the product, be sure to clean the following positions by using the prescribed cleaning tools:

Position to be cleaned	Cleaning tools
Pickup lenses	Cleaning liquid : GEM1004 Cleaning paper : GED-008

Position to be cleaned	Cleaning tools
Fans	Cleaning paper : GED-008

8. PANEL FACILITIES

Front panel



1 ⏻ STANDBY/ON

Press to switch the system on or into standby.

2 DIRECT PLAY buttons

Press to start playback of any disc in the player.

3 DVD/CD

Press to switch to the ***DVD/CD*** function. Also starts/pauses/resumes playback of the currently loaded disc.

4 TUNER FM/AM/ST.

Press to switch to the tuner function, then between bands and station presets.

5 TV /L1 / L2

Press to switche between the external sources, **TV**, **LINE1(L1)** and **LINE2 (L2)**.

6 |◄◄ ◄◄ and ►► ►►|

Press to skip tracks/chapters; press and hold to scan backwards/forwards.

- When in listening to the tuner, use to tune to startions or select presets.

7 ■

Press to stop playback.

8 ►/II

Press to start or resume playback. During playback, press to pause; press again to restart playback.

9 DISC SKIP

- During playback, press to start playing the next disc in the player.
- If the disc tray is open while no disc is playing, the tray rotates one disc space.
- If the disc tray was opened using the **EXCHANGE** button, then pressing **DISC SKIP** rotates the disc tray two disc spaces.

10 EXCHANGE

Press during playback to open the disc tray without stopping playback. Press again to close the disc tray.

11 ⏏ OPEN/CLOSE

Press to open / close the disc tray.

12 Disc tray

13 VOLUME control

Use to adjust the volume

14 DISC indicators

Shows which disc spaces are currently occupied.

15 Display

16 CD MODE indicator

Lights when the CD Mode is on.
In this mode, the system only plays audio CDs and WMA/MP3 discs.

17 Timer indicator

Lights when the timer is set.

18 RW COMPATIBLE

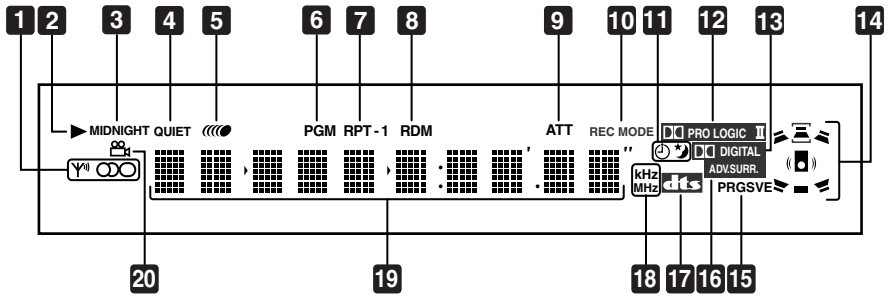
This mark indicates compatibility with DVD-RW discs recorded on a DVD recorder in Video Recording(VR) mode.

19 Mic jack (DV-8 : Only)

20 MIC volume (DV-8 : Only)

21 PHONES jack Headphone jack.

Display



"The display for the XV-HTD540 is shown in the illustration below"

1 Tuner indicators

Lights when a broadcast is being received.

Lights when a stereo FM broadcast is being received in auto stereo mode.

Lights when FM mono reception is selected.

2 ►

Lights when a disc is playing.

3 MIDNIGHT

Lights when the Midnight mode is selected.

4 QUIET

Lights when the Quiet mode is selected.

5

Lights to indicate random or repeat play of all discs loaded.

6 PGM

Lights when a program list has been programmed.

7 RPT and RPT-1

RPT lights during repeat play. **RPT-1** lights during repeat one-track play.

8 RDM

Lights during random play.

9 ATT

Lights when the input attenuator is active for the currently selected analog input.

10 REC MODE

Lights when Rec Mode is on.

11 Timer indicators

Lights when the timer is set

Lights when the sleep timer is active

12 PRO LOGIC II

Lights during Dolby Pro Logic decoding.

13 DIGITAL

Lights during playback of a Dolby Digital source.

14 Speaker indicators

Thees show which speakers are being used to output the current source. The illustrations below show some example displays.

5.1 channel surround sound

Stereo (2.1 channel) sound

3.1 channel sound with Dialogue enhancement on the center channel

5.1 channel surround sound with Virtual Surround Back mode active

(When headphones are connected, none of the speaker indicators are lit.)

15 PRGSVE

Lights when progressive scan video output is selected.

16 ADV. SURR.

Lights when one of the Advanced Surround listening modes is selected.

17 DTS

Lights during playback of a DTS source.

18 kHz / MHz

Indicates the unit of the frequency shown in the character display (**kHz** for AM, **MHz** for FM)

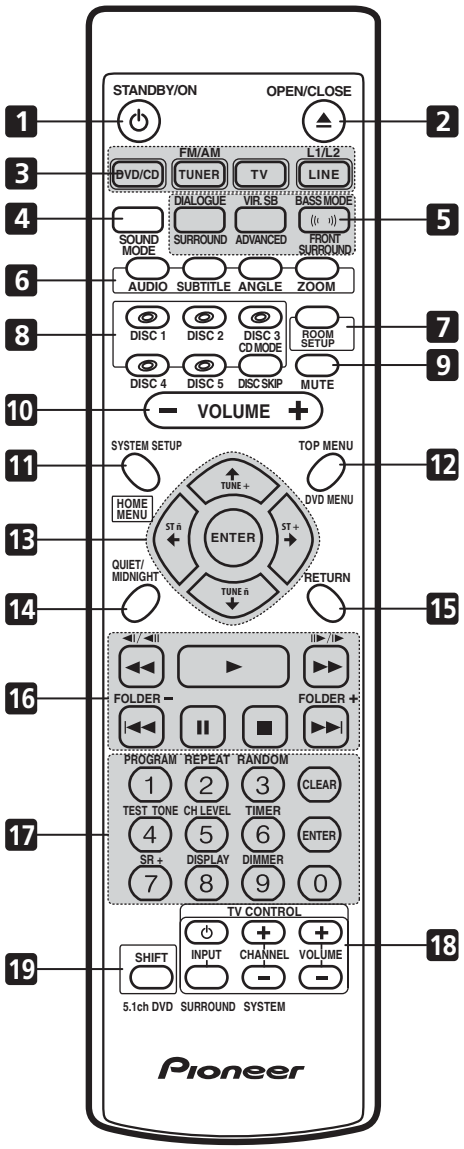
19 Character display

20

Lights during multi-angle scenes on a DVD disc

Remote control

"The remote control for the XV-HTD540 is shown in the illustration below"



Important

Functions printed in green on the remote control are accessed using the **SHIFT** button. Press the function button you want while holding down **SHIFT**.

1 ⏻ STANDBY/ON

Press to switch the system on or into standby.

2 ⏏ OPEN/CLOSE

Press to open/close the disc tray.

3 Function select buttons

Press to select the source you want to listen to (**DVD/CD**, **TUNER**, **TV**, **LINE**)

4 SOUND MODE

Use to adjust the tone and effect levels/ settings.

5 Surround sound and enhancement buttons

SURROUND
Use to select a Surround mode.

DIALOGUE (SHIFT + SURROUND)
Use to select a Dialogue mode.

ADVANCED
Use to select an Advanced Surround mode.

VIR. SB (SHIFT + ADVANCED)
Press to switch the Virtual Surround Back speaker effect on/off.

FRONT SURROUND
Use to select a Front Surround listening mode.

BASS MODE (SHIFT + FRONT SURROUND)
Use to select a Bass Mode.

6 DVD buttons

AUDIO
Press to select an audio channel or language.

SUBTITLE
Press to display/change the subtitle display.

ANGLE
Press to change the camera angle during DVD multi-angle scene playback.

ZOOM
Press to change the screen zoom level.

7 ROOM SETUP

Press to start Room Setup.

8 Disc selection buttons

DISC select buttons
Use to select discs in the player.

DISC SKIP/ CD MODE

- During playback, press to start playing the next disc in the player.
- If the disc tray is open while no disc is playing, the tray rotates one disc space.

  If the disc tray was opened using the **EXCHANGE** button (front panel only), then pressing **DISC SKIP** rotates the disc tray two disc spaces.
- Use with **SHIFT** for **CD MODE**: Use to switch CD Mode on/off.

9 MUTE

Press to mute all sound from the speakers and headphones (press again to cancel).

10 VOLUME

Use to adjust the volume.

11 HOME MENU / SYSTEM SETUP

- Press to display (or exit) the on-screen menu for Initial Settings, Play Mode functions, etc.
- Use with **SHIFT** for **SYSTEM SETUP**: Use to make various system and surround sound settings.

12 DVD MENU / TOP MENU

- Press to display a DVD-Video disc menu, or the Disc Navigator if a VR mode DVD-RW, CD, Video CD /Super VCD, WMA/MP3 or JPEG disc is loaded.
- Use with **SHIFT** for **TOP MENU**: Use to display the top menu of a DVD disc in the play position (this may be the same as pressing **DVD MENU**).

13 Cursor buttons, ENTER and tuning buttons

Cursor buttons
Use the cursor buttons (⬆ / ⬇ / ⬅ / ➡) to navigate on-screen displays and menus.

ENTER
Press to select an option or execute a command.

TUNE +/–
Use to tune the radio.

ST +/–
Use to select station presets when listening to the radio.

14 QUIET/MIDNIGHT

Use to select Quiet and Midnight listening modes.

15 RETURN

Press to return to a previous menu screen.

16 Playback controls

►

Press to start or resume playback.

◄◄ and ◄II/ ◄II
Use for reverse slow motion playback, frame reverse and reverse scanning.

►► and II►/I►
Use for forward slow motion playback, frame advance and forward scanning.

I◄◄/ FOLDER –

Press to jump to the beginning of the current chapter/track, then to previous chapters/tracks.
Press **SHIFT +** I◄◄ to jump to the beginning of the previous folder

►►I / FOLDER +

Press to jump to the next chapter/track (or folder by pressing **SHIFT +** ►►I).

II

Press to pause playback; press again to restart.

■

Press to Stop playback.

17 Number buttons and SHIFT functions

Use the number buttons for selecting chapters /tracks from a disc directly; use with the **SHIFT** button to access the functions printed in green.

PROGRAM (SHIFT + 1)

Use to program/play a program list.

REPEAT (SHIFT + 2)
Use to select a repeat play mode.

RANDOM (SHIFT +3)
Use to select a random play mode.

TEST TONE (SHIFT + 4)
Use to output the test tone (for speaker setup).

CH LEVEL (SHIFT +5)
Use to adjust the speaker level.

TIMER (SHIFT +6)
Press to display the clock and to access the timer menu.

DISPLAY (SHIFT +8)
Press to display/change disc information shown on-screen.

DIMMER (SHIFT +9)
Press to switch between normal and dimmed front panel display.

CLEAR

Press to clear an entry.

ENTER

Press to select menu options, etc. (works exactly the same as the **ENTER** button in **13** above).

18 TV CONTROL buttons

These buttons are dedicated to control the TV assigned to the **TV** button.
• Use to turn on/off the power of the TV.**INPUT**
Use to select the TV function.

TV CHANNEL +/–
Use to select channels.

TV VOLUME +/–
Use to adjust the volume on your TV.

19 SHIFT

Use to access the functions/commands printed in green on the remote (press the button for the function you want while holding down **SHIFT**).

■ Jigs list

Name	Jig No.	Remarks
Service Remote Control Unit	GGF1381	diagnosis
DVD Data Disc	GGV1174 (& GGV1133)	diagnosis (ID data setting) • GGV1174 is to be released in May, 2004. Use only GGV1174 after GGV1174 was released because GGV1174 includes all the data of GGV1133.
DVD Test Disc (DVD-Video)	GGV1025	Check of DVD-Video
CD Test Disc	STD-905	Check of CD
Jig Cable	GGD1160	diagnosis (DV8 Only)
Jig Cable	GGD1222	diagnosis (HTD540 Only)
Jig Cable	GGD1228	diagnosis
Jig Cable	GGD1315 (x2)	diagnosis